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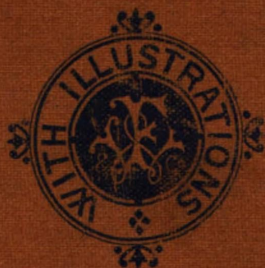


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A
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FOR THE
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BY THE AUTHOR OF
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A Practical Guide for the Management of Cage Birds.

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CONTENTS.

	Page		Page
Introduction	I	Golden Oriole	42
BIRDS OF PREY.—Golden		Mango Bird	43
Eagle	5	Black-headed Oriole	43
Sea Eagle	6	Yellow Bulbul	43
Ger-Falcon	6	Jocose Bulbul	43
Peregrine do.	6	Laughing Thrush	43
Moor Buzzard	9	Black-faced Thrush	44
Common do.	9	Wax-Wing	44
Merlin	10	WARBLERS.—Nightingale	45
Hobby	10	Blackcap	49
Goshawk	11	Fauvette	51
Sparrow Hawk	11	Whitethroat	52
Kestrel	12	Lesser do.	53
Kite	13	Wood Wren	53
OWLS.—Long-eared Owl	14	Willow Wren	53
White or Barn Owl	14	Chiff-Chaff	54
Little Owl	17	Reed Warbler	54
CROW TRIBE.—Raven	17	Sedge Warbler	54
Carion Crow	21	Redstart	54
Hooded Crow	21	Black do.	55
Rook	21	Blue-throated do	56
Jackdaw	22	Redbreast	57
Cornish Chough	24	Indian Nightingale	59
Piping Crow	24	Dayal	59
Magpie	25	Indian Robin	60
Jay	27	Bluebird	60
American Blue do.	28	Stonechat	60
Canada do.	29	Winchat	60
Starling	29	Wheatear	60
Rose-coloured Pastor	31	Hedge Accentor	61
Mina Bird	32	Wren	62
Paradise Grakle	33	Gold-crest	63
Purple Grakle	34	Fire-crest	65
Troopial	34	TITMICE.—Ox-eye Tit-	
THRUSH TRIBE.—Missel		mouse	66
Thrush	34	Cole Titmouse	66
Song Thrush	35	Marsh Titmouse	67
Blackbird	37	Bearded Titmouse	67
Ring Ouzel	39	Crested Titmouse	67
Redwing	40	Blue Titmouse	67
Fieldfare	40	Long-tailed Titmouse	69
Migratory Thrush	40	WAGTAILS.—Pied Wagtail	70
Mocking Bird	40	Grey Wagtail	71

	Page		Page
Yellow Wagtail	71	Indian Silver-bill	122
PIPITS.—Meadow Pipit	72	Black-headed Finch	122
Tree Pipit	72	Waxbills and Avadavats	122
Shore Pipit	73	St. Helena Waxbill	122
LARKS.—Skylark	73	African do.	122
Woodlark	75	Orange-cheeked do.	123
FINCHES.—Canary	77	Orange-breasted do.	123
Goldfinch	92	Grey-blue do.	124
Chaffinch	96	Australian do.	124
Mountain Finch	98	Red-tailed Finch	124
Siskin	99	Avadavat	124
Linnet	100	Fire Finch	125
Mountain do.	101	Cordon Bleu	125
Mealy do.	102	Bronze-headed Manikin	127
Lesser Redpole	102	Black do.	127
House Sparrow	102	Paradise Whydah	128
Tree Sparrow	103	Pin-tailed do.	129
Yellow Ammer	103	Dominican do.	130
Corn Bunting	104	Philippine Weaver	130
Ortolan	104	Rufous-necked do.	130
Girl and Reed Bunting	104	Red-billed do.	130
Greenfinch	104	Grenadier Grosbeak	131
Hawfinch	105	Bishop Birds	132
Bullfinch	105	Madagascar Grosbeak	132
Crossbill	108	Tanagers	132
Parrot do.	109	Scarlet do.	133
Pine Grosbeak	109	Superb do.	133
Virginian Nightingale	109	Humming Birds	134
Red-crested Cardinal	111	PARROTS.—Grey and Green	
Red-headed do.	112	Amazon Parrots	138
Green do.	112	King Parrakeet	138
Nonpareil	113	Pennant's do.	139
Indigo Bird	114	Rose-hill do.	139
American Goldfinch	115	Bulla Bulla do.	139
Saffron Finch	115	Cockateel	139
Cuba and Negro Finches	116	Ground Parrakeet	140
African Singing Finch	116	Many-coloured do.	140
Chestnut-breasted do.	116	Turquoise do.	141
Banded Grass do.	116	Budgerigar do.	141
Brisbane Finch	117	Love Birds	143
Diamond Sparrow	117	Brazilian do.	143
Diamond Bird	118	African do.	143
Cutthroat Sparrow	118	DOVES	143
Cambasso Bird	119	AVIARIES	144
Java Sparrow	120	CAGES	149
Spice Bird	120	SEED, ETC.	150
African Silver-bill	121	Average prices of Birds	151

BIRD-KEEPING.

A Manual.

" Under the greenwood tree,
Who loves to lie with me,
And tune his merry note
Unto the sweet bird's throat,
Come hither, come hither, come hither !
Here shall he see
No enemy
But winter and rough weather.

" Who doth ambition shun,
And loves to lie i' the sun,
Seeking the food he eats,
And pleased with what he gets,
Come hither, come hither, come hither !
Here shall he see
No enemy
But winter and rough weather."

SO writes Shakespeare: yet to the "sweet bird" who tunes his "merry note," "winter and rough weather" are direful enemies; and "under the greenwood tree" lurk many murderous foes, such as foxes, weasels, stoats, and wild cats, while rapacious birds, ravens, hawks, and owls hover overhead, and human assailants wage war against him. Numbers of young birds are destroyed before they are fully fledged; and of those who arrive at maturity, very many perish during every inclement season from lack of the "pleasant food" they seek.

And while I deprecate the practice of ensnaring the feathered choristers of our woods and fields, who daily delight us with their harmony; while I rejoice in their "wood-notes wild," and love to see them flitting hither and thither in the full and free enjoyment of their liberty I

cannot but feel that those philanthropists who indiscriminately denounce *all* bird-keeping, look only at one side of the question, and take no account of the miseries which many wild birds undergo in "winter and rough weather." Liberty is very sweet, but it has its drawbacks in the perils to which its enjoyment is exposed; and these should be well considered, before wholesale denunciations are fulminated against those who imprison their feathered neighbours. My outcry would be against those who keep birds without taking any trouble to make them happy; who are content to look upon them, not as sentient beings, but as ornaments to their rooms and appendages to luxury, and take no pains to inquire into their individual wants and tastes; who care nothing for their affection, lavish no tenderness upon them; in fact, treat them as servants and slaves, rather than as loving friends and companions. My indignation is excited by the sight of birds left for hours exposed to the burning sunshine or the chilling east wind, with their cages uncleaned, their water-glasses half full of dirty water, their seed-boxes choked with husks! I have heard more than once of birds being starved by the ignorance of servants, who declared that they had plenty of seed, when the boxes were full of husks and every particle of grain had been consumed; and of a cage full of canaries, discovered but just in time to save their lives, without seed or water. Birds should never be consigned to the care of forgetful children, or of servants too busy to attend to them. Some require far more looking after than others, but all can be made to suffer greatly from neglect and want of cleanliness.

Much cruelty, too, is unwittingly exercised every day by those who would shrink from the idea of causing suffering to any living creature, from sheer ignorance of bird nature. They would gladly make their birds happy if only they knew how to do so: they grieve to see them moping, observe their ruffled feathers with dismay, and mourn over

Introduction.

3

their failing health and untimely death with entire sincerity. But they have not made themselves acquainted with the habits and necessities of their pets; they have not inquired whether they are hard-billed or soft-billed birds; whether, therefore, they require seed or insects for their food; whether they are natives of hot or cold countries; what kind of habitation suits them best. All this must be learned before they can be competent to be intrusted with the welfare of their little captives; and when they have acquired this general information, they ought to serve an apprenticeship to the individual bird, to find out its attractive qualities and peculiar tastes, in order to render it perfectly at home and happy in its imprisonment. Mr. Kidd has said, truly enough, that affection is only to be obtained by bestowing loving care upon the birds whose hearts we desire to win. Some bird hearts, as well as some human hearts, are much more easily won than others; but, as in the parallel case, they are not the less to be coveted when hard to win, and, once obtained, the attachment is generally more lasting and exclusive than that which is very readily given.

But if all loving wiles fail, and any bird's heart cannot be won; if, as Chaucer says,

“His liberty the bird desireth aye,”

“let him have it,” I would say, “do not keep him in misery, fretting against his bondage: if he cannot be made happy by his attachment to his owner, and thus receive full compensation for the loss of his liberty, set him free.” Some birds are of such an active disposition and mercurial temperament, that it is positive misery to them to be confined within the limits of a cage: these it would be far better not to imprison, but to make them our outdoor pensioners, providing them with a store of fat and bread crumbs when their natural food fails them, and giving them the means of warmth and shelter in the winter. Many of these would live happily, when they became tame, in a large

aviary or bird-room. But this is not the case with all birds; some are teased by the bustle and activity of a number of companions, and thrive better alone, or with a mate.

All this must be taken into consideration in the treatment of each species; and it is to assist those who earnestly desire to promote the health and happiness of their birds, to ascertain all that it is essential for them to know in order to accomplish this, that this little Manual has been undertaken. The difficulty in obtaining accurate information about many of the little foreigners more recently imported into England, and the impossibility of becoming intimately acquainted with the habits of those of whom I have had no personal experience, will, I fear, cause it to fall far short of the completeness I desire for it; and for all such shortcomings I would bespeak the kind indulgence of my readers.



BIRDS OF PREY.

Fashions change with the times about bird-keeping as well as other matters. In olden days birds of prey were the principal pets; and, when hawking was a common sport amongst all ranks, the smaller birds were only valued as game for the larger and more rapacious kinds. No one then cared to make pets of singing birds, but every one had his special and appointed Hawk: from the emperor to the peasant, each, according to his station in life, had his apportioned pet bird of prey. The emperor had his Eagle or Vulture; the king his Ger-Falcon; the nobles their Rock, Peregrine, and Bastard Falcons; the esquire his Harrier; the lady her Merlin; the yeoman his Goshawk;

Birds of Prey.

5

the servant his Kestrel. Even the priest had the Sparrow Hawk appointed for his game bird. Treatises were written upon the "noble art of falconry," and no person of high rank was thought fit for his station if he were ignorant of it. Great sums were paid for hawks who were properly trained; and falconers experienced in the care, feeding, and training of these birds could obtain very high prices for their services.

Since the sport of hawking has died out in England but few of the rapacious birds have been kept as pets; but now and then one hears of caged Eagles and Hawks, and Owls are frequently kept in barns, and occasionally in cottages and stable-yards, for the sake of their services as mousers. A few words must, therefore, be devoted to each of these birds.

The GOLDEN EAGLE (*Aquila chrysaetos*) was formerly not unfrequently an inhabitant of the British Isles; but the increase of the population and the cultivation of the land have driven it to the Highlands, to wild parts of Ireland, and to some parts of Wales. The female, which, in the Falcon tribe, is larger than the male, often measures three feet and a half in length, and upwards of eight feet across when the wings are extended. Its prey consists of large quadrupeds and birds, fawns, lambs, grouse, etc. Young pigs and fish are also found in its larder, which is generally upon one ledge of rock, while its nest, rudely constructed of sticks, twigs, and heath, lies on another ledge. The Eagle and his mate assist each other in hunting their game, and, carrying their prey to the nest, tear it to pieces for their young. They are most audacious birds when in pursuit of game, and will even seize a hare just before the hounds are upon it; they are keen fishermen too, and are sometimes drowned by pouncing upon large pike, which have carried them under water. Nothing is more grand than the swoop of this bird, and he ought to be seen in his native wilds: the wretched prisoners whom one occa

sionally sees shut up in a cage, or chained to a tree, give one no idea of the wild bird. No doubt it could be trained, like the Falcon, to fly at game, and might be tamed to a certain extent. Many instances are on record of this; but its weight would be a drawback to its value in falconry, and one cannot imagine it happy in captivity. Tame Eagles are said to have a particular liking for the flesh of cats, and to prefer it on all occasions to that of the rabbits, fowls, etc., generally provided for them. But I have heard of a SEA EAGLE (*Haliaeetus albicilla*) in captivity, who, although its favourite food was fish, would feed freely on the flesh of any creature but cats. This bird was confined in a very large cage, in which was placed the hollow trunk of a tree; but it would never resort to its shelter, and would not even take the food put into it. It would recognize the person accustomed to feed it, but never became tame. On one occasion of a school treat being held on the lawn near its cage, a child was seen crying bitterly, and on being questioned, complained that the eagle had come to the side of its cage, to which she had been incautiously near, and had taken away her bun, fortunately without doing her any injury. This White-tailed Eagle is more common than the Golden Eagle, for which it is often mistaken when it has not attained to its mature plumage.

The GER or GYR-FALCON (*Falco gyrfalco*) is the largest of the true Falcons, and is very rarely to be met with in England. The Greenland and Iceland Falcons used to be purchased at a very high price, on account of their great courage and strength, to fly at birds of large size, such as cranes, herons, and wild geese. They are by nature so fierce and wild that it was much more difficult to train and tame them than the PEREGRINE FALCON (*Falco peregrinus*), of whom good old Izaak Walton writes: "In the air, my noble, generous Falcon ascends to such a height as the dull eyes of beasts and fish are not able to reach to: their bodies are too gross for such high elevation; but from

Birds of Prey.

7

which height I can make her descend by a word from my mouth, which she both knows and obeys, to accept of meat from my hand, to own me for her master, to go home with me, and be willing the next day to afford me the like recreation." Its name is derived from its wandering propensities. It has been found in all parts of the world, and it has extraordinary powers of flight, extending its range over the northern parts of both hemispheres, and being met with in America, India, and at the Cape of Good Hope, as well as in Europe. In Scotland and Ireland it makes its nest on the rocks and high cliffs, both inland and on the coasts, on the high cliffs between Freshwater Gate and the lighthouse in the Isle of Wight, and it is known in Devonshire and Cornwall by the name of the Cliff Hawk. Occasionally a Peregrine Falcon has been captured at sea many hundred miles from any land, and it is said to fly a hundred and fifty miles in an hour in pursuit of its quarry, and that a single chase will frequently occupy a space of eight or ten miles. The eagerness and fearlessness with which it makes its "stoop" are wonderful; yet it is very easily and speedily trained, and is capable of great attachment to its owner, as an anecdote related by Mr. Knox will prove. Two Peregrine Falcons were taken by a Captain Johnson, of the Rifle Brigade, across the Atlantic, and were allowed a flight every day after they were fed. They always returned to the ship in due time; but one evening, after a longer absence than usual, one of the birds came back alone. Captain Johnson mourned the other as lost; but soon after the arrival of the regiment in America, he saw a paragraph in a Halifax newspaper, stating that the captain of an American schooner had in his possession a Hawk, which had flown on board his ship. Suspecting this to be his lost favourite, Captain Johnson went to Halifax and asked to see the bird, relating the particulars of his loss. The American captain at first affected to disbelieve his story, and refused to allow him to see the falcon, but

was at length persuaded to do so. The moment she was brought into the room she darted towards her old master, rubbed her head against his cheek, took hold of the buttons of his coat and champed them playfully between her mandibles, and showed her delight and affection by every means in her power. There could be no doubt as to the ownership, and the Falcon was restored to her rightful master.

However pleasant pets the Peregrine Falcons may be to their owner, the wild birds must be very undesirable neighbours to the proprietors of moors and other preserves, especially as they are said to have an innate love of sport, and to prefer grouse, woodcocks, etc., to more ignoble game.

The young birds are very voracious, and keep their parents constantly at work to supply them with food. An instance of their sagacity is recorded by Mr. Sinclair. Seeing a man being lowered towards their nest, the female hovered close to her young, while the male bird circled high in the air, and dropped from his beak the food he was bringing to the young birds, which was caught by the female and carried to them by her.

The females are always preferred to the males for hawking: they are larger and more daring and persevering than their mates, which are called in the language of falconry *tiercels* or *tarsels*. When the birds are taken from the nest, they are kept in darkness and without food for several days, and are then fed by the falconer, and taught to know his voice and leap on his hand when called; then they are exercised in flying at a pigeon tied by a string, and caressed and fed if they bring it to the falconer, but punished if they tear it to pieces when killed. The greatest regularity is necessary in feeding the Falcons, or it is said that they will never acquire their full development of colour or size. They are fond of raw beef; but it is necessary always to give them some feathers or fur with their food, which they

Birds of Prey.

9

will throw up in the form of castings; or oblong balls consisting of feathers, hair, or bones forcibly compressed together. Falcons, Hawks, and other birds of prey have this faculty, and it is observed also in Shrikes, Swallows, and insectivorous birds feeding on insects with hard and indigestible wing-cases.

A lady in Ireland found a pair of MOOR BUZZARDS or MARSH HARRIERS (*Circus ceruginosus*), taken by some peasant boys from a nest—helpless white puff-balls, not strong enough to stand on their long legs. They were very sickly and wretched, having nothing to eat but mashed potatoes; so she very compassionately took them home, and put them into a large cage upon some straw and heather, and superintended their feeding, which must have been a most unpleasant operation to witness: they had liver, and mutton, and rabbits, and mice, and feathers and fur always had to be administered with raw meat, for the reason given above. However, the foster-mother was rewarded for her self-denying kindness and care by the well-doing and growth into full strength and beauty of her troublesome pets. When they got the full use of their wings they used to fly away for some hours, but always returned morning and evening at the sound of a long whistle, and came regularly to be fed. When their mistress was out on her pony with her dogs, they would soar after her, wheeling about in the air, and swooping down upon the dogs, whom they seemed to delight in tormenting, hunting them about, striking their claws into their backs, and screaming into their ears. By degrees they absented themselves more and more, and the male bird disappeared altogether. The female remained longer, and returned from time to time for food, but at last she too was tempted away, and probably found a mate, and fell into the ordinary routine of buzzard life with her kind.

Though superior to the COMMON BUZZARD (*Buteo vulgaris*), the Moor Buzzard does not possess the true Falcon

character, and was considered an ignoble Hawk. The MERLIN and HOBBY (*Falco æsalon* and *Falco subbuteo*) are true Falcons, and though but small birds, possess great courage and are of rapid flight. The Merlin was considered a very excellent bird for hawking, and was much used to fly at partridges and other small birds. It is easily tamed and exceedingly docile. An amusing anecdote is told by Mr. Knox of a wild Merlin who was his daily companion while snipe-shooting in Ireland, following him from one marsh to another, and always watching for a wounded bird to which he could give chase; he never meddled with a bird that fell dead to the ground, but appeared to consider all the disabled birds his lawful prey. After a while he was joined by his mate, and both birds continued to attend Mr. Knox on his shooting expeditions. The first report of his gun was sufficient to bring them to him; and as soon as a snipe was wounded one would rise above it in a succession of circular gyrations, and swoop upon it, and if he missed the other would pursue the quarry, which had no chance of escaping both of his foes, and was sure to be seized by one of them, while the other would be close at hand to "bind to it." These birds continued to follow the sport for more than two months, and constituted themselves Mr. Knox's companions during the whole of the time he was snipe-shooting in the neighbourhood. The Merlin seems to have no fears about the size of its prey, and can be taught to fly at partridges, grouse, and magpies. It is a good pigeon-hunter, and most persevering in its chase of thrushes, larks, and similar small birds, which it will follow through branches and leaves if they seek refuge in such coverts.

The Hobby is sometimes called the Miniature Peregrine Falcon; but it prefers wooded situations to the coasts and barren rocks in which the latter delights. It was generally used to fly at larks, quails, and snipes, and is sometimes taken by bird-catchers to assist them in catching skylarks,

Birds of Prey.

II

but its predilection for insects will sometimes cause it, even when trained, to turn aside from its quarry after a beetle or cockchafer. In captivity it should be fed on small birds, or on very fresh beef cut into small pieces. It is easily tamed and gentle in temper, though so daring in pursuit of its game, that it has been known to dash through the open window of a room at a bird confined in a cage in it.

Though larger than the Ger-Falcon, the GOSHAWK (*Astur palumbarius*) is not nearly so powerful or swift-winged, and is used more for hares and rabbits than for winged game. It steals upon its prey instead of dashing boldly at it, and will not follow it into covert as the Peregrine and Merlin do, but waits for its coming out. It has a fierce temper, and is less to be trusted at liberty than other Falcons, whom it would attack and kill if it escaped from its jesses.

The little SPARROW HAWK (*Accipiter Nisus*) is a very bold audacious little fellow, and will fly at any bird, whatever its size may be, in the most reckless manner. It is of a quarrelsome disposition, and if put with others of its kind in a cage, or fastened on the same perch, they will be sure to fight, and probably the conqueror will eat the victim. This was the case with a pair of Sparrow Hawks which were put into a cage together: the female killed and devoured her intended mate. It is a very difficult bird to train and tame, and even when this seems to be accomplished, it is subject to fits of fright or passion, which for the time completely paralyse it. Yet Bishop Stanley tells of one brought up by a person who was fond of rearing a particular breed of Pigeons, who succeeded in bringing about a friendship between the Sparrow Hawk and the Pigeons. He flew about with them, and roosted at night in their dove-cote, and showed none of his natural ferocity even at feeding-time, never being known to touch any of the young Pigeons. He was quite unhappy when separated from them, and uttered cries of joy whenever he saw

any person with whom he was familiar, being "as playful as a kitten, and as loving as a dove."

The Sparrow Hawk is often mobbed by a number of small birds: it appears to be bewildered and frightened by its assailants, but will frequently turn suddenly and seize one of them, and make off with its victim.

The KESTREL (*Tinnunculus Alaudarius*) will often do the same when mobbed by swallows, who are very fond of surrounding it; but on one occasion when a sparrow had been caught by a Kestrel, its cries brought a number of swallows to its rescue, and they attacked the Hawk with so much fury that they compelled him to release his victim. This bird is supposed to prefer a mouse diet to any other, but I fear it cannot be acquitted of stealing young chickens or any other small game that may come in its way, and its name would seem to signify a propensity to lark-eating. Still it does devour a great quantity of mice, and is most useful to the farmer on that account. It also eats reptiles, frogs and moles, and insects, and may be seen chasing beetles and cockchafers quite late at night, catching them in its claws, and devouring them while on the wing. It will also destroy worms, caterpillars, and other larvæ. When in the air its wings are continually shivering, and its common name of Windhover has been acquired from this habit of hovering with its face towards the wind.

A writer in "Science Gossip" says he once possessed a very large and beautiful Kestrel hen, which soon became so docile and affectionate that she would come when whistled to, and perching upon his hand, took great delight in being fondled, and rubbed her head against the hand that caressed her. The secondary and tertiary feathers of one wing being clipped, she was allowed the run of a large walled garden, and she kept her feathers and feet delicately clean. She was always shut in a small tool-house at the end of a hothouse at night, and here the poor bird fell a victim to a large rat, which probably stole upon her while

she was asleep, or she would have beaten him off. If secured against such enemies, the partial liberty allowed to this bird would keep it and its compeers in a much more healthful and happy condition than the close confinement of a cage, in which birds of prey look miserable. Care must be taken in September and October, however, not to let the tame Kestrels be loose all day, lest they should be enticed away by their wild companions, as it is believed that they migrate at that season of the year. Immense flights of Hawks are seen to pass periodically over the Mediterranean towards Africa then.

KITES or GLEADS, so called from their gliding flight (*Milvus vulgaris*), when taken from the nest, may be easily tamed and rendered very engaging and docile. A pair taken in Argyleshire were allowed a flight every morning: they never flew far, but soared to a great height in the air, always returning to the lure or the hand when called. They preferred mice to birds or any other food. When on the wing, they would catch rats let out of a cage-trap in the most expert manner.



O W L S.

Owls must be classed amongst the rapacious birds, and much as they are disliked by all the Hawk tribe, there are many points of resemblance between them. Their beaks and claws are much of the same make, and their eyes are as bright, though much larger and fuller. There are Eagle Owls and Hawk Owls, so called for their resemblance to these birds, who fly by day as well as night,

and are equally destructive to game. The night-flying Owls are wonderfully clear-sighted and acute of hearing, and their wings are provided with feathers so soft and pliant as to make no noise in striking the air, so that they can fly quietly along in the silence of night. They feed chiefly on mice, and small reptiles, and insects, and are very useful birds on account of their wholesale destruction of vermin. They are accused of robbing pigeon-houses and dove-cotes, and no doubt they will carry off pigeons and other small birds, if they can find no other food; but Mr. Waterton and other close observers of Owls assert that they often frequent pigeon-houses to pick up the vermin harboured there, and that they have been shot with the rats in their claws, which they have pounced upon when about to prey upon the young pigeons. Owls are expert fishermen, and will drop into the water upon the fish which come to the surface. Some people have conjectured that the eyes of the Owl, like those of the cat, glare in the dark, and attract the fish within their reach by this luminous appearance. They appear to be very like cats in some particulars, and I have read of a young LONG-EARED OWL (*Otus vulgaris*) which struck up a great friendship with a cat and her kitten, only interrupted in the case of the latter by her habit of playing with a live mouse, which always excited the Owl's indignation, and he would pounce down and kill it, and then give it back to the kitten.

The WHITE or BARN OWL (*Strix flammea*) is easily tamed when taken young, and is a very amusing pet, capable of great attachment to its owner, but of great dislike to strangers, and very spiteful and mischievous if it takes up any antipathy. I have heard of one Owl who had a great liking for a tame skylark, and would allow it to perch upon its back and nestle among its soft plumage, but it would kill any other bird that came within its reach.

Another Owl belonged to one of the Canons of Winchester Cathedral, and had the range of a very pretty

garden in the close, with ivy-covered walls and large trees and shrubs; but his master grew tired of him, and gave him to five young ladies, the daughters of an old friend living in the town, who made a great pet of him. "Pat" used to live a great deal in the kitchen, and was particularly fond of getting into the meat-screen and basking in its warmth; but if he could get an opportunity of stealing out of the kitchen, he would set off on an exploring expedition over the house, and was met with in all parts of it—sometimes perched among the ornaments on the drawing-room mantelpiece, apparently admiring himself in the mirror; sometimes in the bed-rooms, washing himself in the water-jugs and looking at himself in the looking-glasses. He had a great eye for colours, and had a peculiar fondness for pink, perching upon any pretty silk of that colour, and eyeing it with great satisfaction. He had strong likes and dislikes, and took a violent antipathy to a young girl who was in the habit of coming to the house. On one occasion Pat escaped to the roof of the stable, and his mistresses were afraid they would lose him: he resisted all their entreaties to come down; but on seeing the girl crossing the yard, he immediately flew down upon her, and the servants were obliged to seize him before he had done her mischief with his formidable beak and claws. After this escapade one of his wings was cut, to prevent his getting away. He was very much pleased when he could get into the drawing-room, which was forbidden territory to him: he would get in by the window, if it was incautiously left open, if he could not get in by the door. He never did any mischief, but went about gravely examining everything; then perched himself upon a chair and looked out of window as if perfectly happy and contented there.

His real home was the stable, but he was very little in it except at night. He was fed chiefly on raw meat, and when ill of the "gapes," was doctored, like the fowls, with

peppercorns. The friend who gave me this account (one of the sisters to whom he belonged) did not remember his catching mice: she said he lived a very artificial life, being wide awake all day and asleep at night, and died of consumption, supposed to be brought on by the great changes of temperature to which he was subjected. If, however, he had no mice, he would probably be destroyed by the absence of the fur or feathers, which all Owls require as much as Hawks. A gentleman who kept one of these Owls says that if he had no mice, he swallowed sand and small stones with his raw meat, and the pellets he threw up consisted chiefly of these, which seemed to have answered the same purpose as the fur and bones of the mice. This Owl ate rabbits, rats, moles, frogs, and black slugs when given to him. Bechstein says that the White Owl should be kept in a large cage, or chained to a perch in an aviary or bird-room, as it will destroy all the small birds, though mice are its favourite food. It is difficult to manage during the breeding season; at other times, if birds or mice are put into its cage in the evening, it will eat them in the night. A writer in "Science Gossip" observes that Owls and some species of Hawks always bring their wings forward and spread their tails when seizing their food, and that they are supposed to do this in order to conceal it, because they do not like to be watched while eating. He gives another reason for this,—that if the bird were to strike its quarry while on the ground as it does in the air, it would be disabled or killed by the shock which it would receive; but that, by swooping down upon its prey, and bringing its wings and tail downwards and forwards with a sharp stroke, it alights upon the ends of its strong elastic quills, and deadens the shock to its own body, while at the same time it encloses a space of four or five feet in circumference, out of which the mouse cannot escape; the roots of the quills being plentifully supplied with nerves, the Owl feels at once any attempt of his captive to get through, and

The Crow Tribe.

17

seizes it with his claws. The remains of this instinct, he thinks, causes these birds to "hide their food" in captivity.

The LITTLE OWL (*Strix passerina*) is strictly nocturnal in its habits, and becomes very lively towards evening. In its wild state it feeds on mice, bats, small birds, and insects. In a cage it may be kept in good health, fed on lean mutton dried and soaked in water for two days before it is eaten. Three quarters of an ounce a day will be enough for it, in addition to the mice or birds, which are necessary to it that the fur or feathers may cleanse its stomach; otherwise it will die of decline. The Small Owl is said to be a very clean bird, and to be an amusing pet from its very odd and grotesque gestures; but it has a hoarse, disagreeable cry, and is apt to be very restless in the breeding season.



THE CROW TRIBE.

The RAVEN (*Corvus Corax*).—So many anecdotes are told of this bird, to which many strange superstitions are attached, that there is no need to multiply proofs of its great sagacity and cunning. Shepherds and gamekeepers wage war against it; the former with good reason, as they declare that it watches any weakly animal among their flock, and that if a lamb seems very feeble and likely to die, the Raven will accelerate matters by attacking its eyes. Mr. Knox defends it from the enmity of gamekeepers, declaring that the Raven is the friend of those who desire to preserve game, because it will not allow any weasel, stoat, or bird of prey to approach the neighbourhood of its nest; and he asserts that, although pheasants and hares abounded in the immediate vicinity of a pair of Ravens who used to breed every year in Burton Park, Sussex, neither they nor

their young were ever touched by them, but they lived upon the flesh of dead animals, rats, and rabbits, brought from a long distance. Probably they prefer carrion if they can get it, but they seem to have a very indiscriminating appetite, and to eat small mammalia, birds' eggs, reptiles, insects and fish, and occasionally grain.

The Raven is found in both hemispheres and in all climates, braving equally the severity of an arctic winter and the heat of the tropics. In most countries he is considered either a sacred bird or a bird of ill omen. He is a grim ungainly bird, and his habit of turning his head to look over his shoulder has made some people suppose that he was pursued by an evil conscience, and his croak is supposed to bode misfortune to those who hear it. Yet tame Ravens have been petted even by sailors, the most superstitious of men; and Captain M'Clure, in his narrative of the discovery of the North-West Passage, tells of a Raven which haunted the "Investigator," unmolested by any of the men, between whom and the bird a mutual confidence had been established; so that when it left the ship its departure was mourned and its society missed by all. The dog would sometimes run at the Raven, but it would quietly watch his movements, and hop on his head, and search for food at the dirt-heap, keeping its eye always upon the dog, and croaking occasionally as if in mockery of him. Two other Ravens visited the ship at another time, when the cold was very severe, and lived upon any scraps they could secure after meal-times. The dog considered these his perquisites, and the Ravens would throw themselves intentionally in his way just as the mess-tins were being cleaned out. The dog would run at them, and they would fly a few yards, and entice him on and on by appearing to escape him only by an inch, till they had drawn him to a considerable distance from the ship, when they would fly back, and devour the scraps before the dog had time to get there. They seemed to enjoy outwitting

The Crow Tribe.

19

him exceedingly; and Ravens and other cunning birds, such as Jackdaws and Magpies, certainly appear to have the power of appreciating mischief, and will often do mischief for mischief's sake. A tame Raven which was kept by a friend of my brother's used to lay plots to catch the dog, and displayed considerable ingenuity in enticing him into situations where he could peck him with impunity. This bird did so much mischief at liberty, that at length he was confined in a large cage, and even here he seemed to take great pleasure in enticing the dog into dangerous proximity to his cage, by putting a bone close to the bars, and pretending to turn away from it, being all the time lying in wait to pounce upon the marauder as soon as he came within his reach. One morning in the summer my brother, who was sleeping in a room near the Raven's cage, was aroused very early by an extraordinary noise proceeding from it, and on going to the window to investigate the cause, he found that a wild Raven was perched upon the cage of the tame one, and was talking in Raven language, while the other bird replied in all the tongues which he had acquired—chattering, stringing together all the words and sentences it knew, coughing, sneezing, barking, and spluttering, till the dialogue became the most extraordinary combination of sounds that could be imagined. The wild bird appeared to be endeavouring to persuade its companion to join him, while the captive poured forth all its accomplishments in answer to his blandishments. Next morning the same scene occurred, but apparently the wild Raven was convinced of the uselessness of his attempts, for it was never witnessed again.

The manner in which the Raven utters the sentences he has learned is often so completely as if he understood what he was saying, and he so often uses the right phrase to accomplish his purpose, that it would seem that he must attach some meaning to it, or at least that he has observed the effect of certain words, and repeats them

when he wishes to attain the same object. I have read of a Raven attached to an inn, who would always steal up to any strange dog that came on the premises, and suddenly shout in his ear "Halloa! whose dog are you?" and before the dog could recover from his surprise, would call out "Hie! ho! go home!" and send him flying up the street at a frantic rate. The same bird would start off a cart-horse by shouting "Gee! whoa!" exactly like the carter. Such stories are so common that it would be useless to repeat them here.

Young Ravens are easily tamed if taken from the nest and fed upon bread and milk, meat, worms, cockchafers, etc. When full-grown they will eat anything; and when young they will learn to repeat any words by hearing them again and again, especially if they are rewarded by a nice titbit after they say their lesson, their memory and power of imitation being quite wonderful. They should be kept in some warm corner in an outhouse, or in a large cage, and not allowed to roam through the house, as they are dirty birds, and not pleasant companions in a dwelling-house.

Bishop Stanley relates an anecdote of the strange partnership of a Raven and a little terrier belonging to the landlord of an inn. These comrades used to go out upon poaching expeditions, and killed a number of hares and rabbits. As soon as they came to a covert, the dog went in and drove the game towards the bird, and the Raven waited close to one of the outlets, and pounced upon any creature that came out, killing it himself if he could, if not, waiting for the dog to come out and help him. These strange allies were fond of rat-hunting too, and the Raven helped the dog quite as much as a ferret could do.

They are said to be very affectionate parents, and Mr. Knox relates that on occasion of a Raven's nest being robbed by a schoolboy, he found the young birds half starved and three of them with their wings clipped; these

The Crow Tribe.

21

he thought it useless to restore to the nest. But fearing that the Ravens would desert their haunts, he put back the perfect bird one night, in the forlorn hope of the old birds' taking care of it; and greatly to his delight the experiment answered, and the Ravens reared the young bird, and returned again to their "clump" in the following spring, bringing up other families in the same nest. These birds are said to have a great attachment to the place where they have once had a nest, and to return again and again to the same tree.

Both the CARRION CROW (*Corvus corone*) and the HOODED CROW (*Corvus cornix*) are tamed and domesticated in other countries, but they are not often kept in confinement in England. They are said to be very intelligent, and capable of great attachment to their owners, but very thieving and mischievous. In many of their habits and characteristics they resemble the Raven.

The ROOK (*Corvus frugilegus*) is not often made a domestic pet, as it is not easily reared when young; but it appears to have a good deal of the sagacity inherent in others of the Crow tribe, and will learn to imitate the barking of a dog and the notes of other birds admirably. It is best known living in its colony; and great amusement may be obtained by watching the proceedings of the colonists in a rookery, which sometimes has several thousand birds congregated together on a clump of trees. They appear to have a system of jurisprudence of their own, and a criminal code, and have been seen to hold a trial of delinquent members of their body, ending in condemnation to banishment or death.* They are much attached to their old building-places, and will often continue to return to them even when crowded cities grow up around the trees they frequent. They are said to be very sagacious

* The same practice is recorded of the Carrion Crow and the Hooded Crow, which are said to hold "Courts" of justice in their communities.

in selecting and avoiding certain trees, and to forsake any trees marked for felling; but this may be caused by their observation of the decay going on in the upper branches of the condemned trees.

Rooks are accused of doing much mischief to the farmer, but they certainly render him infinite service, by their wholesale destruction of grubs, worms, and insects, even if they do him harm by pulling up the young blades of corn occasionally. Grey, white, and pied Rooks are sometimes found.

The favourite pet bird of the Crow tribe is the smallest *Corvus*, the JACKDAW (*Corvus monedula*), a most intelligent, merry, noisy fellow, renowned for his powers of imitation. These birds resemble Rooks in their sociable habits, living together in considerable numbers on most friendly terms. They generally select very high situations for their nests, and build in church towers, belfries, and steeples, but occasionally in hollow trees. At Stonehenge there are Jackdaws' nests among the great stones, and on the sea-coast they will often build in cavities in the cliffs or rocks. Sometimes, however, they will build in chalk-pits and in rabbit burrows. A colony of Jackdaws, at Cambridge, robbed the Botanic Garden of a quantity of wooden labels used to mark the plants, and no less than eighteen dozen of them were taken from the shaft of one chimney. The Jackdaws had used them instead of twigs for their nests. In the ruins of Holyrood Chapel in Edinburgh there was found in a Jackdaw's nest once, a large piece of lace, part of a worsted stocking, a silk handkerchief, a frill, a child's cap, and several other things too ragged to be made out. It is almost as great a pilferer as the Magpie, and travellers relate that the Jackdaws in Ceylon are so impudent that they will snatch bread and meat from the dining-tables of the open houses, even when surrounded with guests; but they are so useful in consuming offal and dead vermin, that they are put up with on that account, as carrying off

substances which in that hot climate would soon turn putrid. In North America a bird very much like the Jackdaw, the American Crow, is equally given to pilfering, and will go into the tents and sit on the edge of the kettle hanging on the fire, and steal the victuals out of the dishes, and take the baits out of the hunters' traps. The Jackdaw eats indiscriminately insects, seeds, eggs, carrion, shell-fish, and fruit: it is often seen perched on the back of sheep to pick out any parasites from the wool. In confinement it seems to prefer meat to any other food. The young birds, if taken from the nest when nearly fledged, are very easily tamed and taught, and may be brought up like young Ravens. The old birds will sometimes feed them if they are put in a wicker cage, and hung up near the nest till they are old enough to take care of themselves. If full-grown birds are taken, they must have their wings clipped twice a year, and may be suffered to go at large.

A number of anecdotes of the sagacity and cunning of tame Jackdaws are recorded. I have read of one who stole some pickled cockles from a jar, and being detected in the act, the cook called out, "You rogue! you go to the cockles, do you?" and punished him by throwing a ladle-full of hot fat over his head, which scalded his pate so that he was quite bald for a time. Soon afterwards, when his master had a party, the Jackdaw saw among the guests one with a bald head, upon which he flew upon his shoulder, and looking at the bald head, exclaimed, "You rogue! you go to the cockles, do you?"

A friend of mine used to tell of a tame Jackdaw who was sadly given to pilfering, and would fly in at cottage windows and steal everything he could find. One day he carried off a half-crown, but brought it back the next day. Being shut up in a drawer once by accident, he called out "Mother, mother!" and the mistress of the house looked about in vain for the children; at last she opened the drawer from which the sound seemed to come, and out

hopped the bird. A house in London was once set on fire by a Jackdaw, who carried a box of lucifer-matches upstairs, and rubbed them on the floor till the bed-clothes caught fire.

The CORNISH CHOUGH or RED-LEGGED CROW (*Fregilus graculus*) much resembles the Jackdaw in manners and colour, but has a curved orange-red bill, very like coral, and very brittle, and red legs and feet, with strong black hooked claws. It inhabits the sea-coasts, where it builds in rocks and caves, and occasionally in ruined towers. Its natural food is grain and insects, but in confinement it will eat flesh greedily, and becomes very tame and docile, but is as mischievous as the Jackdaw. On a lawn where five Choughs were kept, one part of it was always brown, and this was caused by the continual tearing up of the grass by the roots by these birds in search of grubs. Colonel Montagu had a tame Chough in his garden for some years, which was very troublesome from its extreme curiosity. If the gardener was pruning or nailing up the trees, he would examine the nail-box, carry off the nails, and scatter the shreds about, mount up the ladder, run round the wall, and try to get in at the windows of the house. He was very fond of being caressed, especially by one lady to whom he became exceedingly attached, and would sit upon the back of her chair for hours; but if affronted, he would use his bill and claws very effectively. He disliked children exceedingly, and would scarcely let them, or strangers of any age, enter the garden. He was particularly fond of grasshoppers, chafers, and other insects, and raw and dressed meat and bread he would eat greedily, as well as barley and hemp-seed.

The PIPING CROW (*Gymnorhina tibicen*) of New South Wales must be mentioned here, because Mr. Gould thinks that it would be a valuable addition to our cage birds, as it is very hardy, and bears captivity well. It is not a true "Crow," but in some particulars appears to have more

affinity with the Shrikes: the colonists call it the Magpie on account of its white and black plumage, and it seems to fill the place of a Magpie to them, being a trustful bird, attaching itself to mankind and haunting barns and farm-houses. If it takes possession of any garden or plantation it will only allow a few of its friends to intrude, and repays its master by the rich and varied song it pours out every morning and evening. Its name *tibicen* means a flute-player, and its song is said to resemble the notes of a flute. It lives mainly on large grasshoppers and other insects: in captivity it will eat any animal food, fruits, and berries. A bird kept by Mr. Bennett in Australia possessed a great variety of accomplishments. It would call out, "Fire away! fire away!" then give a long whistle, then a crow which set all the cocks in the neighbourhood crowing, then would cackle so like a hen as to induce the cook to go and search for the newly-laid egg, and end by imitating the bark of a little dog to the life. If he was taken out of his cage by Mr. Bennett, he would lie flat on his back in his hand, as if dead, with his legs in the air. This bird died on his voyage to England: he was continually fighting with a young game cock, whom he always conquered; but the unequal contest seemed to exhaust him so much that it caused his death.

Every one knows the MAGPIE (*Pica caudata*), but few are aware of the beauty of its plumage, who only see it penned up in a cage or at a distance. The white is so exceedingly pure, and the black is shot with dark green, blue, and purple, the varying reflections of which are very beautiful. It appears to be a shy bird, generally keeping at a safe distance from mankind, although never building far from houses; perhaps because gamekeepers and farmers wage war against it on account of its depredations. No food comes amiss to it; it will eat young game and poultry, fish, carrion, eggs, insects, fruit, and grain. Yet it must do good service in ridding gardens and fields of destructive

foes, for it eats beetles in great numbers, snails, worms, reptiles, and mice. When tame it is a very amusing bird, and will learn to talk like a parrot and to perform many odd tricks; but it must be taken from the nest when it is only a fortnight old, and fed at first on bread soaked in milk or water, afterwards on chopped meat, and then it can be kept on any kitchen scraps. When it is nearly fledged it must be accustomed to take short flights and return to its owner, and the wings may be a little clipped till it becomes quite at home in captivity, and has no desire to take flight. It will then become tame enough to follow its master like a cat, and is capable of great attachment to individuals; but its invincible propensity for mischief, and its desire to carry off and hide everything shining or metallic, makes it capable of doing a great amount of damage in a very short space of time. The Magpie has a strong attachment to his mate, and will show great courage in defending his nest and young; but if bereaved of his mate, will very speedily find another.

Such numberless anecdotes of the cunning tricks of this bird have been recorded, that it is scarcely worth while to add to them. They seem to show an innate delight in doing mischief for the sake of mischief, as well as for the gratification of a natural desire to hide anything they can carry off. A Magpie kept in a school would always take the opportunity of carrying mud into the kitchen as soon as the maid had cleaned it, and evidently enjoyed her rage on discovering his handiwork. It appears to have been a pet in ancient as well as in modern times. One, in the possession of a barber in Rome, renowned for its imitative powers is mentioned by Plutarch, and in the present day it is a favourite in France, Germany, Sweden and Norway, in Spain, Italy, in the country between the Black and Caspian Seas, and in Northern India and Japan. In France, where most small birds are ruthlessly destroyed, the Magpie appears to be protected, and in Sweden and

Norway it is a great favourite, and very familiar with the inhabitants, who would not kill a Magpie on any account, but whether from attachment, or from an idea that ill-luck would befall the destroyer, is not ascertained. The Norwegians cut holes in their buildings and nail up pieces of wood against them for their nests, and give them a sheaf of corn at Christmas.

The JAY (*Garrulus glandarius*).—The European Jay is found in all the temperate parts of Europe, and is well known in most wooded districts of England. The sportsman and the gardener alike detest it, because its harsh scream of warning often prevents the former from approaching his game, and its fondness for fruit and vegetables makes it very destructive amongst gardens and cherry orchards. It devours chestnuts, beech-nuts, and acorns, and the flowers of some cruciferous plants. It will eat small quadrupeds, birds, and insects, and is especially fond of eggs. It is a very beautiful bird, about the size of a large pigeon, of a bright reddish-brown, with blue wings barred with black and edged with white; and a crest decorates its head, the feathers of which it raises and lowers at pleasure. It is a favourite cage bird in many parts of England, and its great powers of imitation make it an amusing pet. The young Jays should be taken from the nest when a fortnight old, and fed six times in the day with sopped bread, curds, and finely-chopped beef. They must be kept out of hearing of other birds, or they will catch their notes: they are very quick in imitating the voices of animals and any noises they hear. Even in a wild state they will introduce into their soft and pleasing song the bleating of a lamb, the mewing of a cat, the hooting of an owl, and the neighing of a horse. Bewick tells of a Jay who imitated the sound of a saw so exactly that the neighbours supposed a carpenter was at work all Sunday. Another Jay used to amuse himself by setting the dog at the cattle by whistling and calling him by name ;

a diversion which proved fatal to himself; for, having caused the fall of a sick cow on the ice by inciting the dog to attack her, the bird was complained of as a nuisance and ordered to be destroyed. The Jay should be kept in a large wicker or wire cage not less than two feet square, and should be fed entirely on nuts and wheat, with plenty of water for drinking and bathing. If he has any other food in confinement the cage will become offensive.

The AMERICAN BLUE JAY (*Cyanocorax cristatus*) is very like its English relative in many of its characteristics. It is even more beautiful in its colouring, which, on the upper part of the body, is of a light bluish-purple, the wing-coverts being of a rich azure and purple blue, barred with black and tipped with white. The crest is blue or purple, and it has a black collar round its neck; the chin, cheeks, and throat are bluish-white, and the under part of the body quite white. The two middle feathers of the tail are light blue deepening into purple, and the other feathers light blue, barred with black and tipped with white. This bird is about eleven inches in length. Like the European Jay, it is inquisitive and suspicious, and always gives an alarm note as soon as it sees a sportsman amongst the trees. It is very much disliked by the negroes, who regard the bird with a strange mixture of superstitious fear and hatred, considering him an agent of the devil, and killing him whenever they can. The pine-cutters of the north have a great aversion to him too, for when hard pinched by the cold, these birds swarm about their camps, and are bold enough to carry off the meat roasting before the fire. They appear to have many of the characteristics of the Magpie, and the same propensity for hiding things, especially articles of food, which they will deposit in some out-of-the-way places, sticking an acorn here and a beech-nut there in a dust-hole, or a snail between splinters of a log. It cannot be denied that they are very sagacious birds; and they have great powers of imitation, and also a most flex-

ible voice, producing very soft and musical notes, and imitating the harshest screamings of the Hawk and the terrified cries of a little bird to perfection, thereby setting all the birds around them in a tumult. In confinement the Blue Jay will learn to talk, and if kindly treated becomes very affectionate to its owner, and will even learn to be on friendly terms with birds which in its wild state it would devour. One kept for some time by Mr. Wilson would permit a Baltimore Oriole to pull its whiskers and take all sorts of liberties with it. The Blue Jay should be kept on the same food as the English Jay; it is partial to fruit and nuts, but in its wild state devours more animal than vegetable food.

A nearly allied species is found in Canada, but it is far inferior in beauty to the Blue Jay. This is the *Perisoreus Canadensis*, the CANADA JAY or WHISKY JACK, a little ash-coloured bird, a great favourite among the settlers, who say that wherever they go, whisky and Whisky Jack invariably follow. These Jays are so tame that they will hop about by the fire, pick up crumbs, and perch on the logs, as if born and bred in a shanty; and even the Indian children will not kill them, though they often tease the poor little birds till they die of worry.

The STARLING (*Sturnus vulgaris*).—The Starling much resembles the birds of the Crow tribe both in structure and habits. It is a beautiful bird, with a bright, glossy plumage—black varied with purple and green, reflected with great brilliancy in different lights, and spotted with buff; often called from its mottlings the Speckled Stare. It is a well-known bird in Europe, Asia, and Africa, and is common in all parts of the British Islands, assembling in flocks of many thousands, each flock appearing to be under the command of one single bird, whose guidance it obeys instantaneously. They migrate to West Devon and Cornwall and other warm parts of the British Islands, in October, and generally come northward again in March,

building in the clefts of rocks, in church towers, and in holes in decayed trees; sometimes in pigeon-cotes. The Starling feeds chiefly on insects, worms, grubs, and grasshoppers, and is often to be seen perched upon the backs of sheep, ridding them of their parasites. In confinement it will eat raw and cooked meat, bread, cheese, and anything that is not salt or sour; but it prefers raw beef to any other food. Old birds are often very violent when caught, and will even starve themselves to death; but young birds are easily brought up from the nest, kept in a basket lined with hay, and fed every two hours with the crumb of white bread soaked in milk. They will soon learn to pipe tunes if their lessons are repeated to them early in the morning; but they must not be kept within hearing of other birds. They can be taught to articulate words, and even sentences, by repeating them over and over again, without adopting the cruel method of slitting their tongues; and they are very clever and engaging pets, capable of learning a number of amusing accomplishments, and of becoming greatly attached to their owners.

Many amusing stories are recorded of Starlings. I have read of one, which was brought up in a house and lived chiefly in the kitchen, who always watched the butcher's daily visit with great interest, and went to the street door perched on the shoulder of the cook. If the meat delivered were beef, he would come back screaming with delight; but if it happened to be pork, he would be in a great rage, crying out, "Too fat! too fat!" This was a favourite phrase of his, and was used on all occasions as a word of dislike. Being jealous of a baby in the house, he screamed out, "Too fat! too fat!" whenever he saw it in the nurse's arms. This Starling had a great enemy in the cat, who used to steal his food whenever an opportunity offered. The bird would sometimes take his revenge by hiding behind the window-curtains when the cat's-meat man came to the door, and calling out "Not to day" so exactly like the cook

as quite to deceive the man, who would walk off in the full persuasion that the meat was not wanted.

The Starling's natural song is a melodious one, continued through the greater part of the year.

The female has a less brilliant plumage than the male, and has large white spots on the under part of the body. She is a very affectionate mother, and Mr. Wood relates an anecdote of one who carried off her five young ones, one after another, from the thatch of a burning barn to a place of safety.

The young Starlings are brown, with patches of purple and green after their first moulting. They do not acquire their full plumage till after the second year. White and buff-coloured varieties of the Starling are not uncommon.

In captivity, if not allowed the range of the house, the Starling should have a large wicker cage at least two feet long and twenty inches wide, or a round domed one, in which his plumage will not be injured. He must be well supplied with water for drinking and bathing, and the cage must be kept very clean.

THE ROSE-COLOURED PASTOR (*Pastor roseus*).—This bird, also known as the Rose Ouzel, is about eight inches long; has a crested head; neck, wings, and tail of glossy black tinged with blue, violet, and green; the back, lower part of the body, and lesser wing-coverts are of a rose-pink colour, varying in its shades in different birds: the females are quite pale. The legs are of a pale red, with the claws brown and crooked. The males do not acquire their full plumage till their third year.

The Rose-coloured Pastor occasionally, but rarely, visits England. It is found in Syria, Egypt, and Africa, and, in summer, in the warmer countries north of the Mediterranean. It is a common bird in India, and is sometimes seen in flocks of thousands in the wheat-fields; but though destructive here, its arrival is hailed with joy at Aleppo

and other places where great havoc is committed by the locusts, because it devours them greedily.

The bird derives its name of Pastor, or Shepherd, from its habit of feeding among sheep and cattle; it is often seen mounted upon their backs, hunting out their parasitical insects or grubs. Like the Starling, it flies in flocks, and in many of its habits it resembles that bird. It has a flexible voice, and, though its ordinary cry is harsh, it appears to have great imitative powers. A wounded bird, which was placed in a spacious cage and fed upon barley-meal moistened with milk, and insects, grew very tame and sociable, and would take insects from its master's hand. Its song was a mixture of the notes of the Starling, Goldfinch, and Siskin. It lived several years in captivity.

In its wild state the Pastor appears to live principally upon insects, though it is fond of fruit and grain. In confinement it must have a large cage, and a mixed diet of animal and vegetable food, like the Starling and Blackbird.

The MINA BIRD (*Gracula religiosa*).—Besides the true Starlings, there are a number of sub-families belonging to the great family of the Sturnidæ, comprising many foreign birds, which are very easily kept in captivity and are very docile and amusing, generally very clever, lively birds, capable of learning many accomplishments, some rivalling the Starling in speaking. The Mina, Mynah, or Mino Bird (for its name is variously spelt) may be called "*l'oiseau parleur par excellence*." It is very common in India and the Indian islands, and is said to surpass the Grey Parrot in its powers of imitating the human voice. It is often kept in a cage in India, and of late years has been brought to England. It is about the size of a Blackbird, with a deep velvet-like plumage, glossy with metallic lustre, tinged with purple and bronze green. A pure white stripe runs across the pen-feathers of the wing. The bill and feet are yellow, and it has two yellow wattles at the back of the head. It

should have a mixed diet of berries, fruit, and insects; it is said to be very fond of grapes and cherries, in confinement. A pair brought from India three years ago came into the possession of Mr. Colley, hospital surgeon at Great Yarmouth, about two years after they had been in England, and he has kindly furnished me with the following particulars. He keeps them in a large waggon-shaped cage, and feeds them on barley-meal made into oblong pellets about the size of marbles, with water, freshly mixed each morning. He says they require a good deal of water and plenty of sand in their cage, and must be kept out of draughts, but do not need a warm room, and when acclimatized he considers them hardy. They have a curious gait, moving with sudden jerking hops, and turning as they hop. They are exceedingly lively and talkative, and delight in being noticed, chattering most when a number of persons are standing round their cage. The two birds speak in different voices, one having been apparently instructed by a youth, and the other by a deep-voiced man; and will converse for a quarter of an hour at a time, the bird with a deep voice calling out, "Bring the boat alongside!" and the other answering, "Ho! ha! does anybody want the shoeblack?" Then the first bird will speak in Hindostanee, and the other will say, "Hey, what? ha, ha!" upon which his companion will call out, "Bugler, sound the roll-call" in a voice as clear, natural, and powerful as that of a drill-sergeant. They were brought over in a man-of-war, and learned to sound the roll-call with great precision.

Travellers in India mention the troops of noisy Mina Birds consorting with the Indian Jackdaws and Starlings in the groves near the villages, and say that they are extremely useful as scavengers. A bird of the same genus, the PARADISE GRAKLE (*Gracula tristis*), a native of the Philippine Islands, is a voracious devourer of locusts and grasshoppers. Buffon relates that these birds were intro-

duced into the Isle of Bourbon to destroy the locusts, which were ravaging the island; but some of the colonists, imagining that they devoured the grain, caused them to be proscribed by the council and exterminated. However, the locusts increased so rapidly, and did so much damage in the island, that they speedily repented, and the banished birds were brought back and protected by the state, and the locusts were soon destroyed by them.

All the true Grakles are natives of India or the Indian islands. The birds known by this name in America belong to another sub-family, the Quiscalinæ, or boat-tailed birds, their tails being of a most curious shape, the sides being curved upwards. The *Quiscalus versicolor* (PURPLE GRAKLE or CROW BLACKBIRD) is readily tamed and taught to speak. It lives on worms, grubs, and insects, but also makes great havoc in the Indian corn or maize-fields. Another family of American Starlings, the Troopials or Bobolinks, are kept sometimes as cage birds, and a few are brought to England. Probably a mixed diet similar to that of the Starling would suit all these birds in confinement. Some of them, I believe, are fed entirely on potato and egg.



THE THRUSH TRIBE.

There are upwards of a hundred species of Thrushes known, some of which are found in all quarters of the globe. Many of them are migratory birds, and resort to warmer climates in winter. They feed upon berries and fruits, as well as insects. Many of our best songsters belong to this tribe.

The MISSEL THRUSH (*Turdus viscivorus*) is one of the largest and handsomest of the species, and is sometimes

kept in confinement, but he is too large for a cage bird, and his song is very loud. This in his wild state is generally heard in stormy weather, and in consequence the Thrush is called "Storm Cock" and "Screech Thrush," as well as "Holm Thrush," and "Missel Thrush." Mudie accounts for the latter name thus: "It is called the Missel Thrush because it missels (soils) its toes with the acrid slimy juice of the misteltoe berries, of which it is very fond in the winter; and the misteltoe gets its name because it soils the toes of the bird." It feeds also upon holm-berries, and the berries of the juniper and service trees, as well as upon worms and insects, with which it feeds its young. In confinement it thrives upon the bird-fanciers' "universal pastes," and barley-meal or wheaten bran moistened with water. A more generous diet, a little meat, bread, etc. will improve its song. It must have a large cage, at least three and a half or four feet long, and nearly as high, and must be well supplied with water for bathing, and the cage must be kept very clean, or it will soon become offensive. The young birds should be fed upon bread soaked in milk: they will very soon become tame, and will imitate other notes besides their own; still they are not desirable birds to keep in captivity, for in an aviary or bird-room they will probably assail their neighbours, being very combative, quarrelsome birds, ready to attack Magpies, and even Hawks, and showing great courage in defence of their nest and young, on occasion.

The SONG THRUSH (*Turdus musicus*).—The "Song Thrush," "Throstle," or "Mavis," is a well-known bird throughout Europe, and is one of our best songsters, enlivening our woods from the very beginning of spring till quite late in the autumn. On account of its beautiful voice it is in great request as a cage bird, and although in its wild state somewhat shy, it is capable of becoming very tame in captivity, especially if taken from the nest when young. The Thrush generally builds in a holly tree,

hawthorn, or some close bush not very far from the ground. In the volume of "Science Gossip" for 1865 an anecdote is recorded of the cleverness of a pair of these birds, who built their nest in the fork of a mountain ash, close to a house, and were overlooked by an invalid lady from her bed-room window. They were much troubled to shelter their young from the heavy rain, which fell almost without intermission for two days, and at length they placed a stick across the nest, and spreading their wings over this, they completely sheltered it from the rain, and never deserted the perch while it continued; exposing themselves to the downpour to protect their young. On the second day the cock bird brought food to his mate, for herself and the nestlings. As soon as the rain ceased, the perch was taken away; the young were fed with grubs and caterpillars, an enormous quantity of which are destroyed by the Thrush tribe, who do such good service thus, that they ought to be pardoned for their havoc amongst fruit and berries in the autumn. They eat worms and slugs, and are extremely fond of snails, the shells of which they break very cleverly by beating them against a stone. Sometimes a Thrush will choose one particular stone for this purpose, and will carry all the snails he can find to break them upon it. Young Thrushes may be easily reared upon bread and milk, till they are five or six weeks old, and then they should be gradually weaned from it, and fed upon scraped lean beef and bread crumbs. When older, their food should be chiefly barley-meal, made into a paste with milk and water, to which a little lean beef or mutton may be added three times a week; and this must be varied by occasional treats of hard egg, German paste, cheese, boiled potato or carrot, snails, earwigs, and meal-worms. If a snail be put into the cage, a smooth stone must be put in with it for the Thrush to crush it upon. He must have a large cage, well strewn with coarse sand or gravel, and should be well supplied with water for

The Thrush Tribe.

37

drinking and bathing; but his bath should be taken away when used, as the bird is liable to cramp. The food and water should be put outside of the cage, if possible. The Thrush will live many years in confinement, if properly fed and cared for: the two ailments to which he is most subject are constipation and atrophy. For the first, a large spider is the best remedy; for the second, abundance of pure fresh air and a change of diet should be given. The male and female are so much alike in colour, that it is very difficult to distinguish them: the hen is a little smaller, and has not quite such a glossy brown plumage as the male; so that the purchaser of a Thrush should make sure of its sex by hearing its song. The cock has great imitative powers, and will readily learn tunes played on wind instruments or whistled to him.

The BLACKBIRD (*Turdus merula*). — Although the Blackbird is not so good a songster as his relative the Thrush, he has a very cheery mellow song, and, being a lively joyous creature, is in many respects a desirable cage bird. He will learn to whistle tunes with great precision, and is said never to forget a tune once learned. An anecdote is told of one who had been taught to whistle an air, which, on hearing played with variations on the piano, affronted him so exceedingly that he hissed and fluttered his wings till the performance stopped, and then gave his version of the air, whistling it all through as he had learned it. The same bird fell into the hands of a lady, whose custom it was to have the evening hymn sung at the conclusion of family prayers. He caught the tune, and always accompanied their voices, and from that time regularly whistled it every evening at the same hour, long after he had passed into another family, and continued the practice for the remainder of his life. The Blackbird will also learn to imitate the songs of other birds, the crowing of a cock, and the gobble of a turkey, and in its wild state will often mimic them. It is not unhappy in captivity if it has

a large cage, perhaps because it does not live in flocks, as many of the Thrush tribe do, but leads rather a solitary life the greater part of the year.

The Blackbird builds early in the spring, and the nest is generally placed in a bush, and made of grass-stems and roots, lined with mud. Both male and female are very bold in defence of their nest and offspring, and will attack and drive away any prowling cat that comes near them. The birds that are smallest and blackest, and have the brightest yellow rims round their eyes, are probably cocks. If reared from the nest, they must be kept warm and fed on sop made of stale white bread and milk: they are large eaters, and must not be overfed: a quarter of a pound of bread would be enough for four nestlings in the day; they will require a meal every two hours from sunrise to sunset, and the food should be mixed twice a day; if it should turn sour it would kill them. The birds must be taught when two months old if they are to learn to whistle airs; a flute or other wind instrument should be played to them in the dusk of the evening, and at daybreak after they have had a moderate meal, giving them some delicacy as a reward when they have repeated their lesson correctly.

The Blackbird devours worms, insects, and grubs of all kinds, as well as fruit; and so, although he is destructive in an orchard, he does good service to farmers and gardeners. In captivity he should be fed upon a mixture of animal and vegetable food, raw or cooked lean beef, shredded finely and mixed with bread crumbs, German paste, stale bun, and hard-boiled egg, and he should have a meal-worm, snail, earwig, or spider occasionally.

It is of consequence that the cage should be large, whether it be made of wicker or mahogany, with wooden bars. One side should be open, the other boarded, and the top should be of wood, shelving down like a penthouse. The perches should be square, and made of painted deal or mahogany. The food should be placed in deep white

delf pans, fitting into wooden boxes outside the cage. The Blackbird is very fond of bathing, and may have a good deep bath daily in the sunshine, but his cage should not be left wet, as he is subject to cramp like the Thrush: he must have plenty of dry sand or gravel on the floor of it. Another common ailment of the Blackbird is an obstruction of the oil-gland above the tail. If this is shown by the bird's drooping his tail and continually pecking at the gland, it should be anointed with fresh butter and sugar. A little variety in his food will keep him in good health for many years. Bechstein says he will live in captivity from twelve to sixteen years, and sing in a loud and joyous tone the whole year, except during the moulting season. A tame bird, brought up from the nest, used to wake his mistress every morning at dawn of day with his song, and he would fly out of his cage, sit on her pillow and sing; and if she did not open her eyes at once, he stopped, pecked gently at her eyelids, and when she looked up at him, sang on again with quivering throat and drooping wings, in the greatest delight. This was a little Welsh Blackbird, called by the country people *pig-felyn* (yellow-beak). It is called, in some parts of England, Black Thrush, Garden and Black Ouzel, and its old name of Merle, as well as the scientific name *Merula*, is said to be derived from its *mera*, or solitary flight. The hen is of a dusky brown. White and pied Blackbirds are not uncommon.

The RING OUZEL (*Turdus torquatus*) much resembles the Blackbird in its size and plumage, but has a broad white band round its throat, and no yellow beak. It is sometimes called the "ring," "mountain," and "Michaelmas" Blackbird. It comes to England in April, but is not very common except in mountain districts. Its song is loud and sonorous, but consists of a repetition of a few notes only. It will live six or seven years in confinement, and must be treated like the Blackbird.

The REDWING (*Turdus iliacus*) has a much more melodious song, but this is not often heard in England, as it only visits us in the autumn, when the cold of its northern home sends it away. It is known in the north as the "Swedish Nightingale," and travellers in Norway speak much of the loud, clear, and exquisitely sweet notes with which it enlivens the thickets and copses during the short summer night. It arrives in England shortly before the Fieldfare, with which it associates in flocks, but it may be readily discerned amongst these birds by the red underwing-coverts. When the wings are closed it resembles the Thrush, but is a smaller bird, not quite nine inches long, and shows a large patch of orange-red feathers when it spreads its wings. It feeds on worms, snails, and larvæ, and when these fail, on the berries of the ivy, hawthorn, and holly. In confinement it is tame and docile: it must be treated like the Thrush, but cannot bear much heat.

The FIELDFARE (*Turdus pilaris*) is larger than the Redwing, and its throat and breast are of a very bright yellow, spotted or streaked with black. It visits England in flocks in November, but its native country is Norway, where it lives in colonies. It is not a very desirable cage bird, but is used by bird-catchers as a decoy. It may be fed like the Thrush, or on bread crumbs, crushed barley, and grated carrot. It should have some animal food also and fruit, for in its wild state the Fieldfare lives chiefly upon worms and insects, and on juniper and other berries in the winter.

Many of the American Thrushes have a very sweet song, especially the MIGRATORY THRUSH, sometimes called the American Robin, a grey bird with an orange-red breast; and the Wood Thrush. The best-known of these birds is the MOCKING BIRD (*Mimus polyglottus*), which has a very fine and melodious voice, and moreover a wonderful capacity for imitating the notes of any other bird, and reproducing them exactly. It is said to sit upon the

The Thrush Tribe.

41

branch of a tall tree, and throw itself into the air as it sings, as if intoxicated with the sweet sounds it pours forth; but when it comes near to the dwellings of man, it imitates all the harsh sounds it hears produced by the saw, the hammer, the millstone, the grindstone, ungreaed wheels, etc., the barking of dogs, the lowing of cattle, and so on. Its own natural song is very sweet, and it sings during the night as well as in the daytime. Its powers of mimicry are so great that it continually deceives the other birds, sometimes calling them round it at the supposed cry of their mates, sometimes driving them in alarm to the shelter of the thick bushes by imitating the cry of a fierce bird of prey. I have heard of a Mocking Bird brought to England as a cage bird, who collected a mob round his cage in a fashionable street in London, and caused his owners so much annoyance thus that they were obliged to part with him. Every cry or noise that reached his ear was copied to perfection; and as it was impossible to prevent him from catching up and repeating the most disagreeable and discordant sounds, he became a very unpleasant inmate of the house. The Mocking Bird can easily be tamed, if taken young from the nest, and might be brought up on the same food as that given to the Thrush: it feeds on insects, berries, and grain. The male bird is of a dull ashen brown, with a band of white on the wings; the two external feathers of the tail are also white, the centre feathers brown-black. The chin, throat, and under part of the body are of a pale brown, inclining to grey. The hen has less white upon her wings, and the dark parts of the plumage are less dark than in the cock bird. The length of the Mocking Bird is about nine inches. It is very common in Jamaica and St. Domingo, and there it is called the "Rossignol," from its serenades and midnight solos, which are said to be very sweet and beautiful, and quite free from the mimicry which so often spoils its natural song by day. It is a very fearless bird

in defence of its nest, and will attack and drive away any intruder who may approach too near to it. Attempts have been made to induce the Mocking Bird to build in confinement, and with good hope of success, if properly managed.

The GOLDEN ORIOLE (*Oriolus galbula*).—This bird belongs to a sub-family of the Thrush tribe. It is a common bird in Italy, and frequents Spain, Provence, and France during the summer months, going to Asia and Africa in the winter. It comes occasionally to England between April and September, and instances have been known of its breeding in this country. Its curious purse or saucer-shaped nest is generally placed in a forked branch, or suspended from it by two handles like a basket. It is made of grass-stems interwoven with sheep's wool or moss, so as to be strong and warm. The male Oriole is a very beautiful bird, about the size of a Blackbird, of a deep golden yellow, with black wings, and black and yellow tail, the centre feathers of the tail being black with yellow tips, and the others yellow with the lower part black. There is a dark stripe across the eye, and the iris is red, the legs are lead-coloured, and the claws black. The female and young male are of a dusky brown, while the adult male is black and greenish-yellow instead of golden. They are very shy and timorous birds; found in lonely spots and in thick forests. They feed chiefly on insects and grubs, but are fond of cherries, figs, and grapes in the autumn.

They have a loud flute-like note, and are supposed to speak very articulately various words, from which they have derived their names of Oriole, Turiole, Lorient, Pirol, Bülow, etc. They are said to be capable of being taught to whistle if brought up from the nest. They must be fed on ants' eggs and bullock's heart, and gradually inured to bread and milk, or the ordinary Nightingale's food. They do not live very long in captivity, and the young birds brought up

from the nest never acquire the full plumage. They are very restless birds too, and, if kept in a cage, will rub off their quill and tail-feathers, and in a room or aviary are apt to quarrel with other birds.

There are many other Orioles—the MANGO BIRD of India and the BLACK-HEADED ORIOLE of Bengal, etc.—all natives of the Old World. The birds called Orioles in America, the Baltimore Oriole and Orchard Oriole, are really Troopials, before mentioned as allied to the Starlings, and are not true Orioles.

The Bulbuls belong to another sub-family of Thrushes. The YELLOW BULBUL (*Pyconotus flavula*) and the JOCOSE BULBUL (*Pyconotus jocosus*), an Indian species, are well known by the repeated references to them in Oriental writings. They are popularly called Nightingales, from their remarkably sweet voices, and are easily tamed, become very much attached to their owners, and will learn to perform many amusing tricks. In their wild state they hop about in pairs or small parties, and feed on insects, berries, and fruits in the woods and gardens. The Hindoos train the Jocese Bulbuls to sit on their hands, and carry them about with them to their bazaars. One species, the *Pyconotus hæmorrhous*, is kept for the purpose of fighting, and trained like game cocks.

Another sub-family, the Timalinæ or Babblers, belong to India, the Eastern Archipelago, and Australia. They frequent the woods and forests, feeding on insects, which they pick up from the ground or scratch out of the earth with their bills and feet. Several of the species live a good deal upon fruit. Most of them have a sweet song, and easily learn to imitate the notes of other birds. The LAUGHING THRUSH belongs to this family, and the BLACK-FACED THRUSH of India (*Garrulax Chinensis*), of which Mr. R. W. G. Frith had one for some time in a cage. It was very tame and familiar, and delighted in being caressed and tickled: it was a very fine songster, and imitated every-

thing it heard. When chopped meat was put into the cage, it would place the bits, one by one, between the wires; and when a bee or wasp was given to it, the bird seized it and turned its tail round to make it sting itself several times before eating it. A large beetle it would kill with a stroke of its bill, placing it before it, and a small snake given to it was treated in the same manner, pierced through the head.

In its wild state, the Black-faced Thrush feeds on fruit as well as insects. It assembles in large flocks, and frequents jungles and thick forests, where it is often detected by the odd cries, said to resemble a "chorus of wild laughter," proceeding from the flock.

The WAX-WING or BOHEMIAN or WAXEN CHATTERER (*Ampelis garrula*) is the only species of the great family of Chatterers known in Europe. It is a winter visitor to England, and does not like heat, soon gasping for air in a close room. It is sometimes kept as a cage bird on account of its beauty, the plumage being soft and silky, of a reddish ash-colour; the head has a crest of the same colour, and the feathers of the wings are prettily variegated with black, white, and yellow stripes. The under part of the body is chestnut-brown. It derives its name from the curious red appendages to its wings and tail, which look like drops of red sealing-wax. It feeds naturally on insects and berries; in confinement it will eat any of the bird-pastes, bread, fruit, vegetables, and almost everything offered to it. It is very fond of juniper berries. It is a voracious, dirty bird, dull and awkward, and its beauty is its only recommendation.

WARBLERS.

These are soft-billed birds, feeding almost entirely on insects. They are mostly birds of passage, and are very difficult to rear and preserve in health, requiring very great care and attention to their individual peculiarities. Amongst them are our sweetest songsters, yet I do not advocate keeping them in confinement: their migratory habits make them restless at certain seasons, and unless one has the time to devote oneself to them, and can succeed in gaining their hearts so completely as to make up to them for the loss of their natural companions and of their liberty, one cannot be secure of their happiness. In the winter too, when their instinct leads them to resort to warmer climates, they suffer much from cold, unless they can have an habitation of which the temperature is regulated at a certain heat, while fresh air and sunshine are admitted. Even those who have kept Nightingales, as they assert, for several years in health and full song, admit that after five or six years they sing less constantly and sweetly; but that, if set at liberty then, in the month of May, they will be so invigorated as to recover all the beauty and strength of their song. This would seem to betoken an absence of entire happiness in confinement.

The NIGHTINGALE (*Luscinia Philomela* or *Sylvia luscinia*), the most beautiful of all our songsters, comes to England towards the end of April, and leaves us at the beginning of September. It is rarely found in the extreme west of England or in Ireland, and visits some parts of Yorkshire only; in the neighbourhood of Carlisle it has been seen, but rarely goes beyond the southern and middle counties. Some say that it is unknown in Cornwall and Devonshire, and that the Nightingale never frequents spots where the cowslip does not grow; but its plain brown plumage and its fondness for secluded districts may enable

it to escape observation unless especially sought. The Nightingale is said always to return to its birthplace, whether marsh, mountain, or wood, and to revisit the same spot year after year. The males always arrive a few days before the females, and are then easily caught by the bird-catchers on the watch for them. They are very inquisitive birds, and very easily snared by a trap-cage baited with mealworms; but they will sometimes refuse to eat at first, and will require to be coaxed to take their food by placing a few mealworms under a glass in the middle of a pan containing raw beef, scraped free from fibre, and mixed with water and hard-boiled egg. The bird will peck at the mealworms moving about under the glass, and, finding the meat palatable, will eat that; but he must be supplied with mealworms and ants' eggs also. If taken captive before he has found a mate, he is more likely to become reconciled to his fate; but if he has already paired when caught, he will possibly pine and sulk, and refuse to eat his food or sing, or will burst forth into a passionate song, and die. Young Nightingales brought up by hand seldom sing well; they require the tuition of the old birds. If taken from the nest, those which have the lightest-coloured plumage and the most white about the throat should be selected, as they are generally the males. The best food for them is ants' eggs mixed with crumbled and moistened white bread, hard-boiled egg, and occasionally a little bread soaked in milk; but the old birds will sometimes feed them if the nest and young ones are placed in a cage in the place from which they have been taken. If they are captured also, they must be placed in a cage lined with cloth or calico, or they will hurt themselves in their frantic endeavours to escape. Mealworms, ants' eggs, bread crumbs, and sand should be put on the floor of the cage, and plenty of fresh water supplied to them: they must be left undisturbed for a time, and then the nest of young birds must be put within their reach; and, if they feed

them, they may all be placed in a breeding-cage together, and are likely to go on well; but if they neglect the young birds' cries for food, the latter must be fed with a quill every hour, and reared by hand. A gentleman who has been very successful in his treatment of Nightingales, and says that he has not eaten a Christmas dinner for twenty years without the Nightingales' song, fed them entirely on scraped raw beef and hard-boiled egg, mixed with water, and made fresh every morning; and on this food his birds brought up a nest of young ones in a cage. Finding the odour of the cage offensive, he tried subsequently to feed his Nightingales on hard-boiled egg and German paste, for which his recipe was 7 lbs. of pea-meal, 2 lbs. coarse Scotch oat-meal, 1 lb. moist sugar, $1\frac{1}{2}$ lbs. beef dripping, 1 lb. honey, 2 quarts hemp-seed, and 1 pint maw-seed. The dripping and honey were melted together in a saucepan, and the meal and sugar well rubbed in, so as to leave no lumps in the paste; then the hemp-seed, crushed, and the maw-seed were added to it, and, when cool, it was put into an earthen jar. A teacup-full of the paste was mixed every morning with a hard-boiled egg, all, white and yolk, pressed through a fine wire sieve. This was sufficient for five or six soft-billed birds, and on this the Nightingales thrive well.

Another successful rearer of Nightingales, to whom I am indebted for much interesting information on the subject, tells me that he finds a paste made of pea-meal, egg, maw-seed, and sugar answer very well with his birds, but he gives them also beef and egg as before mentioned, and a meal-worm or two every day. Boiled vegetables, carrots, turnips, and beetroots, and soft puddings are also recommended for Nightingales, with a little grated bread, and dried ants' eggs. Bechstein recommends the latter as a specific for most of their ailments, with spiders and other insects, and meal-worms especially. These, he says, may be obtained by putting some with some meal, old leather, or brown paper in a jar, and moistening the cover tied over it with a little

beer from time to time. Here they will breed freely, and a constant supply will be kept up. The ants' eggs can be procured in summer from the nest of the wood ant, and if placed on a cloth in the sun, with the corners turned up on small leafy branches, the ants will carry them under shelter from the sun, and in this way they are obtained free from dirt, and they may be dried in a frying-pan on sand over a slow fire, and kept in a jar full of sand all the winter.

The cage in which the Nightingale is kept must be from twelve to eighteen inches long, ten or twelve broad, and twelve high. The top should be of green baize or cloth, and the three perches (two near the bottom of the cage, and one higher up) should be covered with the same material, as the bird's feet are very tender, and it is generally necessary to remove the scales which form upon the legs and feet once in about three months. When these grow loose and horny, the legs must be soaked in warm water till they can be gently removed with the point of a pen-knife; after which the feet and legs must be well dried and anointed with fresh butter or cold cream. A foot-bath of sherry wine for three or four minutes is recommended for the cramp, should the Nightingale suffer from this (trembling and grasping his perch spasmodically). Warmth is very necessary, especially during moulting, which is always a perilous time with the Nightingale; he must be kept from draughts, and fed with the most nourishing diet. A spider or two, or a little green caterpillar, should be given him occasionally, and a blade of saffron put into the water. For the husk, a kind of cough that sometimes attacks the Nightingale in autumn, he should have a spider, ripe elderberries, grated Swede turnip, etc. A bath should be given daily; but it must not be left in the cage, and plenty of dry sand should be strewed on the floor. The food should be kept in pans which may be easily cleansed, and the beef paste must be made afresh once, or, in the summer, twice in the day: if it becomes in the least sour it will kill the bird.

Bullock's heart boiled or roasted, and sheep's heart, is sometimes given, also. No doubt an empty room in which the sunshine and fresh air could be freely admitted, with pine branches or other evergreens for shade and shelter, would give these birds most happiness; but they are said to sing better in cages than in an aviary with other birds. They are very capricious about their song, however: some birds will not sing except in full sunshine; others only in the dark; generally it is found a Nightingale will sing best when alone, but sometimes one bird tries to rival the others, and keeps its supremacy, reducing his companions to silence. They are whimsical about their cage, as well as the position in which it is placed, and will resent any change in it. Most birds dislike a strong light, and yet require plenty of air, so that the best kind of cage would appear to be one with wooden or wire bars on the front and sides, the top being, as before mentioned, of green baize or cloth, and with green gauze curtains hung round the sides, if required, for shade. For the first year or two of confinement the Nightingales suffer from the yearning for migration, for two or three weeks: they are very restless, suddenly starting up and fluttering their wings, and trying to fly upwards; and they would injure themselves then, if they had not a soft roof to their cage. This, however, is said to subside in time, and that they will become very tame and apparently quite happy; but if set at liberty when their song is becoming weak, they soon recover its strength.

The female Nightingale is not so tall as the male; she has a rounder head and shorter neck, and her eyes are smaller and less bright, and her throat less white. The young males have yellowish feathers in the wings and tail, and may be distinguished thus.

The BLACKCAP (*Sylvia atricapilla*) has a song second only to the Nightingale in power and sweetness, and it is an admirable mimic, learning the notes both of the Canary

and Nightingale, and imitating the latter so exactly, that when singing at night its song is frequently mistaken for that of the Nightingale. It comes to England in April, and leaves us again in September. The old birds are not very easily caught, but the young may be brought up from the nest, fed on bread crumbs moistened with milk, and sprinkled with ants' eggs. The Blackcap derives its name from the black hood extending from below the beak to the nape of the neck of the male; the hen has a brownish-red cap, and as she sings a little, she is often mistaken for a distinct species. The bird is about the size of a Chaffinch; its plumage is olive-green and grey, with a dark brown and green tail. The under part of the body is much whiter in the hen than in the cock bird, and thus the sex of the young birds can be detected. The Blackcap is easily tamed in confinement, and is capable of great attachment to his owner. One which was kept in a hothouse soon learned to take mealworms from his master's hand, and would fly to the jar where they were kept as soon as he saw him approach, attracting his attention by flying close to him, or striking him with his wing if he did not notice him at once.

The Blackcap requires a cage of the same kind as the Nightingale: he prefers shade to sunlight, therefore should have a green baize roof to it, and as he has a habit of pecking at the wires, they should be of unpainted tin, or japanned, or lacquered, so as to prevent his getting any injurious morsels from them. He is very fond of bathing, but the bath must not be left in the cage, and the vessels in which his food is placed should be hung outside, or partially covered, so as to prevent his scattering it about and wasting it, which he will often do.

The Nightingale's diet will suit the Blackcap well, or a paste made of barley-meal, white bread, and carrot, pounded up together. He must have ants' eggs, mealworms, and other insects, crushed hemp-seed occasionally,

Warblers.

51

and a constant supply of ripe fruit, elderberries, currants, raspberries, cherries, apples, and pears in their season. The Blackcap is subject to most of the ailments of the Nightingale. A spider, a rusty nail in the water, and a little boiled milk sometimes, will be good for him, and he must be kept warm and preserved from sudden changes of temperature. For consumption, to which the Blackcap is subject, Bechstein recommends a supply of watercresses. He suffers from the migratory fever in the same way as the Nightingale.

The French call the Blackcap *fauvette à tête noir*; the Italians, *caponera d'edera*, from its fondness for ivy-berries, and by the Germans it is known as the *monk* or *moor*, from its cowl-like hood. It frequents most parts of England, and is a very active, joyous little bird, seldom seen to advantage in captivity, as it is apt to disfigure its plumage when caught wild and caged, and often loses its feathers when in an aviary; probably from heating food. Many of the Warblers, too, moult twice in the year, before their migration to warmer climes, and before their return to England. Probably this is a provision for their long flights; it adds to the difficulty of keeping them in good health in confinement: they require warmth and nourishing, but not heating food. A sunny situation would help the growth of the new feathers; if that cannot be given, a warm bath might be useful, but any chill afterwards must be carefully avoided. The Blackcap and most of the genus suffer from tender feet, and swellings or warts upon them; a little cold cream will soon cure these.

The FAUVETTE, GREATER PETTICHAPS, or GARDEN WARBLER (*Sylvia hortensis*) is a lively active bird, and has a sweet song: it is of a delicate brown plumage, with the under wing-coverts pale buff; brown eyes and beak; the lower part of the body is white. It is a summer visitant of England, and frequents shrubberies and plantations, feeding on insects and fruit. It soon becomes tame and

familiar with its owner in captivity, but it is a greedy bird, and often dies of surfeit, or its feathers fall off and it perishes from cold. It should have the same food and treatment as the Blackcap, with plenty of fruit, roasted apples and pears in winter, and elder, privet, and ivy-berries. Stale bread soaked in boiled milk is also good for it. It is apt to fall ill at its migratory season, and rarely lives long in confinement.

The WHITETHROAT (*Sylvia undata* or *cinerea*) much resembles the Fauvette, but is smaller, and the upper part of the body is of a deeper and redder brown; the throat and chest are of a pure white, with a tinge of rose-colour in the lower part of the body. It is a very lively little bird, continually in motion while singing, springing up into the air, sinking slowly down, and rising again with a fresh burst of song. It flits about among low bushes, branches, and underwood, and is called the Nettle Creeper in some parts of England, from its habit of traversing nettle-covered hedge-banks and coppices. It feeds chiefly upon insects, flies, and caterpillars, especially on the larvæ of the cabbage butterfly, and is very fond of the rose aphid. It has a very melodious song, and a strong spirit of rivalry. One kept by Mr. Sweet in an aviary would sing for hours against a Nightingale, and in the middle of its song would run up to it, stretch out its neck, and sing as loudly as possible, striving to overpower its voice. It is very readily tamed, and appears happy in confinement. Young birds may be reared on bread soaked in hot milk, meal-worms, ants' eggs, and hard-boiled egg; but the parent birds will often feed them in a cage hung near the spot where the nest was. It should be treated like the Nightingale, but should have plenty of elderberries and other fruit, flies and insects occasionally, and requires abundance of water for bathing, and fine gravel, of which it picks up a good deal. The Whitethroat is subject to the same diseases as the Blackcap, but does not suffer from

cold to the same degree, and lives longer in captivity. The female has not the white throat which distinguishes the male from the Fauvette.

The LESSER WHITETHROAT (*Sylvia curruca*)—called also the Brake Warbler, Chatterer, and Babillard—is not so pleasing or brilliant in its song as the Larger White-throat, which it much resembles in plumage. It is supposed to be a very delicate bird, and not to live long in confinement; but Mr. Sweet kept one for several years, and it became very tame, and so attached to its cage that when the door was left open it would fly out, and catch any flies or small insects that came within its reach, but always returned to its shelter; and when the cage was put in the garden it never ventured far from it. It would take a fly from the hand, and drink milk out of a spoon. It must be treated exactly in the same manner, and fed on the same food, as the Greater Whitethroat.

The WOOD WREN or WOOD WARBLER (*Sylvia sibilatrix*), WILLOW WREN, HAY-BIRD or WILLOW WARBLER (*Sylvia trochilus*), and CHIFF-CHAFF, or LESSER PETTICHAAPS (*Sylvia hippolais* or *rufa*) differ but slightly from the Fauvettes and Whitethroats in their habits and requirements as to food and habitation. Mr. Sweet says Wood Warblers should be reared from the nest on moist bread, and bruised hemp-seed, and small morsels of raw meat, or bread and milk and hard egg, and must always have a drop or two of water given to them with their food. The scientific name is derived from the peculiar nature of the song, which sounds as if the bird was shaking all the time it is singing. It is known in some parts of England as the "shaking bird of the wood." It feeds principally on insects, especially the leaf-rolling caterpillars, of which it devours a great number. In confinement it becomes very tame.

The WILLOW WREN is to be treated in the same manner. It is fond of warmth, and will squeeze itself up to other

birds at night as closely as possible. It feeds almost entirely on insects, rarely attacking the fruit trees.

The CHIFF-CHAFF is so called from its peculiar note, resembling "Chiff-chaff, cherry-churry!" Another provincial name is "Choice-and-cheap." Excepting the Golden-crested Wren and the Long-tailed Tit, it is the smallest bird that visits England. The young may be reared from the nest on ants' eggs and chopped meat. Mr. Sweet says a full-grown bird caught by him, took readily to bruised hemp-seed and bread, and bread and milk, into which aphides and other insects were sprinkled, and soon became very tame and familiar with him.

All these birds have a sweet melodious song, and are pretty elegant birds, and desirable inmates of an aviary; but all require a good deal of care and warmth.

There are several other species of Warblers occasionally kept in confinement—the REED WARBLER, SEDGE WARBLER, etc.—all which require similar treatment. Mr. Sweet says that the two birds last mentioned (and the Wood Wren also) are so fond of washing that they will often suffer from it in winter, and that they should only be allowed a bath once a week, on a fine dry morning, so that they may be able to get dry quickly after it. He recommends the yolk of hard-boiled egg, bruised and mixed with water, as particularly good for them, but they all require insects also. Such numbers of noxious creatures are devoured by these birds, that gardeners are very unwise in waging war against them. The Greater Pettichaps and the Blackcaps are the most destructive to fruit trees, but all the Warblers do such good service to us by destroying the insects which damage them far more materially, that they may well be forgiven for taking a few cherries and elderberries.

The REDSTART (*Ruticilla phænicura*) derives its name from its red tail, *steort* being the Saxon for tail. It has a peculiar vibration of the tail, by which the young birds

may be distinguished from young Redbreasts, which they closely resemble. In many places it is known as Fire-tail and Bran-tail (evidently a corruption of *brand*). It is a very beautiful bird, with a grey head, neck, and back, black throat and chest, brown wings, and a chestnut-red and brown tail. The lower part of the body is of a very pale chestnut. A stripe of white passes across the forehead and eyes. The female is paler in colour, and her plumage is altogether less brilliant: she is often mistaken for the Nightingale. They visit England early in April and leave us in October. They live chiefly on insects, flies, beetles, and grubs, and are fond of soft ripe fruit. In confinement they may be fed like the Nightingale, and should have plenty of ants' eggs and mealworms. The young birds may be reared on bread soaked in milk, and ants' eggs mixed with it; but the birds which are a year old are said to thrive best when captured. They are subject to dysentery, for which they should have a rusty nail put into the water; and to fits, for which they should be dipped in cold water, and have a pinch of nitre twice a week after they recover. They seldom live long in confinement; many die of atrophy.

The Redstart is a good songster, and will sing by night as well as by day, if there is a light in the room where he is. He will learn to imitate other birds' songs, and to sing any tune whistled to him: he is a very sensible bird, and will become very much attached to any person who notices him. This bird is said to be peculiarly attached to its young, and to evince the greatest distress if any invader approaches the nest: and an anecdote is told of a male Redstart who acted the part of foster-father to a brood of young ones whose father was shot, and assisted the hen in feeding them.

A fact mentioned at a meeting of the British Association, shows the affection of the BLACK REDSTART (*Ruticilla Tithys*) for its young. A pair of these birds built their nest on the spring of a disused railway carriage at Giessen,

Hesse Darmstadt ; and when this was unexpectedly wanted and attached to a train, the birds followed their young to Frankfort, a distance of nearly forty miles, and back ; and accompanied the train during one or two more short journeys, returning to Giessen after four days, when the nest was removed to a place of safety, and in due time the young birds were fully fledged, and left it. This bird is but rarely seen in England. The breast and lower part of the body are of a sooty black. It sings a good deal, but its song is much more croaking than that of the common Redstart. It must be treated in the same manner as its relative, in captivity.

The BLUE-THROATED WARBLER or REDSTART (*Cyanecula Suecica*) is very common in the south of Europe, but rarely visits England. The chin, throat, and breast are of a brilliant blue, with a white spot in the centre, which becomes red as the bird grows old. A black stripe runs below the blue breast, then a narrow streak of white, and a broad band of ruddy chestnut fading into dingy white. The upper part of the body and the wings are a rich brown, which extends to the two centre feathers of the tail ; the rest of the tail-feathers are red, bordered with black. Its song is very pleasing, and continued from morning to night. It becomes very tame in confinement, and may be kept either in an aviary or in a Nightingale's cage, which must be roomy, as it is very apt to dirty and destroy its beautiful plumage. It soon loses its tail-feathers, and its blue breast generally becomes grey after its first moulting in captivity. It is a greedy bird, and not very cleanly. The Nightingale's food will suit it best, and this must be varied with mealworms and elderberries. It requires plenty of water for drinking and bathing.

The female is paler in plumage than the male. All these Redstarts belong to a sub-family of the Warblers, the Erythacinæ, or Robins, of which the most familiar example is

The REDBREAST (*Erythacus rubecula*).—This bird is known throughout Europe, in Asia Minor, and North Africa. It remains in England the whole year, though it is migratory in some parts of Europe, and seems to have a great love for man, and to court his notice, and attach himself to his habitations, especially in the winter, when a very little encouragement will place him on a most familiar footing. He is not a good inmate of a bird-room or aviary, being so pugnacious in disposition that he is perpetually at war with his own species, as well as with other birds. An old Redbreast, too, will pine in captivity. The only hope of keeping a tame Robin happy is by allowing him to come and go at pleasure, providing him with a warm habitation in winter, but not obliging him to remain a prisoner. Then he will be a regular attendant at the breakfast-table, will pick up the crumbs, and devour bread and butter, and scraps of fat with the greatest delight, and sing a merry song of gratitude in return. He is not happy caged, unless he has been brought up from the nest, and is too restless and lively to submit to close quarters; and when we can enjoy his friendly companionship in a much pleasanter fashion, by attaching him to us as a familiar guest, it seems a useless piece of selfishness to keep him a prisoner. If, however, a young nestling comes into our keeping from any accident, and we desire to rear him from the nest, he must be fed on bread soaked in milk, and ants' eggs or mealworms chopped up with it; and when older, on Nightingale's food. The young birds are grey, with a dingy yellow stripe or dull red spots on their feathers, and do not acquire the red breast and throat till after their first moulting. The males are generally the brightest plumaged birds, even in the nest; but there is not a marked difference between the male and female till they have moulted, when the head and breast of the former become very much brighter than in the latter. The young birds will acquire the Nightingale's

notes if put within hearing of his song. The Robin has an exceeding predilection for butter and fatty substances. Anecdotes are related of these birds hopping in at the window of a house to eat candles, tallow, and butter, and seizing scraps of fat from an Eagle's perch. Probably the fat helps them to bear the cold; I have heard of many birds devouring it eagerly during the winter, and leaving it untouched in warmer weather. In confinement they should have a good deal of variety in their food—German paste, hard egg, chopped meat, soft cheese, bread and fresh butter, flies, ants, caterpillars, spiders, and earwigs, and plenty of fresh water, and a daily bath. If kept in a cage it must not be less than eighteen or twenty inches long, twelve wide, and twelve high. A Nightingale's cage with a green baize roof would suit him best, and the perches should be covered with wash-leather. Ants' eggs and mealworms should be given if he is affected with dysentery. A little bruised malt and plenty of ripe elderberries will be beneficial if he is out of order. He may easily be taught to fly about the room, and even to fly out into the garden and return to his cage when called. He is of a very inquisitive nature, and will hop about the table, and examine anything that he sees in the room with the greatest interest.

Robins choose most extraordinary situations for their nests. There are many instances on record of their building in churches and schools, on shelves in store-rooms, etc. One Robin built in a water-pot, another in the mouth of a shark, in a bird-stuffer's apartment filled with formidable-looking creatures. Curiously enough, this bird was not deceived into the belief these were living animals; although another Robin attacked a stuffed bird of his own species, under the impression that he was alive. Robins are so pugnacious that it is impossible to keep more than one male in an aviary. One of these birds killed more than twenty of his kind for venturing into a greenhouse which

he inhabited. They are jealous, too, of the affection of their human friends, and will sometimes drive away their young if they approach too near to them. One bird whom we used to feed through the winter, and who came regularly to our table for his breakfast of fat and bread crumbs, had a nest in the following summer in a rhododendron bush near the drawing-room window; and on occasion of a long drought, when it was difficult to get insects and worms, and many birds suffered from want of water, our old friend brought his family to the window regularly for a supply of food, as long as they were in need, and followed us whenever we went into the garden, in expectation of crumbs and other dainties. I strongly advise all who love Robins to provide them with a supply of food, and a cocoa-nut husk or covered basket in a warm nook, during the winter, when they suffer from cold, and to allow them to come and go at pleasure, and never to keep them imprisoned during the bright days of spring and summer. They will reward their benefactors with steadfast attachment, and thus remain their joyous friends, instead of their reluctant captives.

Many of the birds belonging to the genus *Copsychus*, inhabiting Asia and Africa, are very like the Redbreast in their habits and attractive qualities. One found in India, the *Kittacinela macroura*, called by the Bengalese *shâmâ*, is a splendid songster. It inhabits the recesses of forests, and sings during the night, from which it has acquired the name of the Indian Nightingale. Numbers of these birds are kept in cages in Calcutta, and it is the custom to wrap them round with folds of cloth, so as to keep both light and air from them, notwithstanding which they sing very sweetly: the natives carry them about thus in the streets. Another Indian species, the DAYAL (*Copsychus saularis*), sings very well, and imitates the songs of other birds. It is called at Ceylon the Magpie Robin, and is often kept in cages by the residents, being very easily

tamed. It is as combative as our Robin, and the male birds are continually challenging each other; one note of defiance is instantly answered by another, and a combat almost always ensues. The native bird-catchers take advantage of this to decoy wild birds; taking a tame bird into the woods, who, on receiving a signal from his master, utters his challenge, and as soon as this is answered he is let loose, and the two birds fight so eagerly that the bird-catcher easily seizes both; and it is said that the tame bird will help him by holding his antagonist with his beak and claws. The *Thamnobia fulicata*, or INDIAN ROBIN, is always found about houses, and is as much cherished in India as the English Robin is here.

The American Robin is represented by the pretty BLUE-BIRD (*Sialia sialis*) of the United States, a great favourite with the people, who often keep boxes in their gardens and close to their houses for the Bluebird to build in, with a hole in the side for it to enter. A few of these birds appear to remain there through the winter; but the greater number resort to the warmer parts of America, and the West Indian Islands, and even to Brazil, for warmth during the inclement season. They feed on insects, spiders, small worms, and caterpillars, and in the autumn on soft fruits and seeds. The head, neck, and upper part of the body of the male Bluebird is of a bright azure blue, with purple reflections; the quill-feathers of the wings and tail being jet black; the throat, breast, and sides of a ruddy chestnut, and the lower part of the body white. The female has paler tints of the same colouring. Its song is very lively and pleasing.

The CHATS, of which there are three English species, the STONECHAT, WHINCHAT, and WHEATEAR, belong to another tribe of the Erythacinæ. They are all mentioned by Mr. Kidd and Bechstein as cage birds, but as their native haunts are amongst wild and solitary moorlands, wastes, and extensive downs and commons, desolate steppes and deserts, one cannot imagine them well placed in a cage

or aviary; the latter would be the best abode for them, as they are by nature very active, lively birds, constantly flitting about the furze or whin bushes, and keeping up a continual chatter. Their natural food is insects and beetles. If kept in confinement, they must have abundance of these — crickets, grasshoppers, cockroaches, flies, caterpillars, etc.—as well as the food recommended for Nightingales. The young birds may be reared from the nest on bread and milk, ants' eggs, and mealworms, and will learn other birds' songs. The Stonechat is a resident in England; the other two are migratory birds. The Wheatear is the most generally distributed throughout Great Britain; in some counties it is so plentiful in the summer that some hundreds are caught and killed as delicacies for the table. They are very pretty birds: the upper part of the body is silver grey; they have black wings and white and black tails, and a black streak passes from the beak to the ear; the breast is orange-buff, the lower part of the body white. The female is not so handsome as the male, and has more brown about her plumage. They are amusing birds to watch at play, flying up and down, jerking their tails about and spreading their wings in a curious manner, singing all the while. The Stonechat has a black head, a spotted black and white body, and brown wings; the Whinchat, a broad white streak across the sides of the head, and another from the chin to the shoulder, and a mottled brown plumage, and white and brown tail.

The HEDGE ACCENTOR, HEDGE WARBLER, TITLING, DUNNOCK, or SHUFFLE-WING (*Accentor modularius*) is known by all these names in England, and is, too, frequently called the Hedge Sparrow, although it is not allied at all to the true Sparrows. It is one of our most common birds, and is known throughout Europe. Its song is low and sweet, but of very little pretension; it is continually moving its wings and tail while singing, and is a persevering songster, singing all the year round, except

when moulting. It is a very blithe, bold bird ; and as it is not at all particular about its food, eating insects, fruit, and seed indifferently, it can easily be kept in an aviary, and may be fed upon German paste, egg, bread, and seed, with insects and fruit occasionally. It is, however, sometimes a quarrelsome bird.

The WREN (*Troglodytes vulgaris*) is a delicate little bird, and, although it remains with us through the winter, it suffers much from cold, and many of the merry little creatures perish during a hard frost. They are very inquisitive birds, and will soon become familiar with those who offer them food, although their natural wariness keeps them at a distance at first acquaintance. They have a melodious song, and are so blithe and active, hopping about incessantly and jerking their little tails, that they are universal favourites, and many people have tried to keep them in cages and aviaries. They may be reared from the nest on bread soaked in boiled milk, ants' eggs, and mealworms ; but they require a great deal of care in feeding them with a quill, lest their delicate little bills should be hurt ; and they are dainty in their food, and require great variety in it : they should be fed on Nightingale's food, with boiled carrot, parsnip, a little hemp-seed, flies, ants, caterpillars, and soft fruit, especially elderberries ; and they must be kept very warm during winter. They are prone to die of consumption, and must have a spider every two or three days if they show symptoms of this disease. Bechstein says he never succeeded in keeping a Wren more than a year in confinement ; and it is much better to make these attractive little birds our outdoor friends, by furnishing them with shelter and food during the winter, than to attempt to keep them in a cage. Most of them live in families, and keep themselves warm by huddling close together in numbers. On cold winter nights they often seek shelter in cow-houses and under the eaves of hay-stacks, or in holes in walls, and in deserted nests, or sometimes packed together,

as many as possible, on the branch of a tree, or rolled up in a ball in a hole.

Wrens appear to be very much attracted by bright colours: anything red will take their fancy exceedingly, and I have read of one of these birds hopping up to a lady who was wearing a muslin dress figured with buds or berries, and growing bolder and bolder till at last it pecked at the dress; and I suppose the colour must have been the attraction. The Wren's nest is the most beautiful, snug little building possible, with a domed roof, and small hole at the side, and a lining of soft feathers. Eight eggs are generally laid in this, but as many as sixteen have been found in a nest. They are most useful little birds, from the quantity of insects they devour, and have been observed to carry food to their nest seventy times in the course of an hour. They choose very extraordinary situations for building sometimes, and Wrens' nests have been found in the inside of a pump, in a water-spout, etc. The HOUSE WREN of the United States (*Troglodytes domestica*) appears to be equally eccentric in its choice of a locality. One of these birds built its nest in the sleeve of a coat left for a few days in a shed. They are said to be better songsters than our little Wrens, and to be as bold and pugnacious as the Robin. They build close to the houses, or in boxes placed for them in the gardens, and are much petted in the United States.

The GOLD-CREST or KINGLET (*Regulus cristatus*), popularly called the GOLDEN-CRESTED WREN, although it has no right to that name, is the smallest of our British birds—only three inches and a half long. It is a beautiful little bird. The upper part of the body is olive-green, the wings brownish-black, with yellow edges, crossed by bands of white and black; and the tail is also brownish-black, edged with yellow; the under part of the body yellowish-grey, darkest on the breast. The crest of the male is of a bright orange in the centre, shading to a paler tint on the

front and sides ; a black line runs on each side of this : the beak is black, and the feet are brown. The colours of the female are less bright, and the crest is paler.

All the movements of this little bird are full of spring and activity ; it runs up the walls, peering into every little crevice for insects, and along the branches of the pine and fir trees, sometimes clinging with its head downwards, and darting its slender little bill into every tiny hole in search of the insects on which it lives. It frequents the pine forests in the north of Europe, and visits Asia Minor, but remains with us through the winter, and has been supposed, therefore, to be a very hardy bird ; but it is found to be so extremely delicate in confinement, as to be more difficult to preserve during the winter than most of the tropical birds. It must keep itself warm, therefore, by its continual movements when at liberty ; it is never still during the day, and probably it creeps into some warm hole during the night. Mr. Thompson, however, says that many of these birds are found dead during the winter in the north of Ireland, even after only a slight frost. Bechstein says the young birds are easily reared on mealworms cut small, flies, ants' eggs, and bread soaked in milk, if taken from the nest when quite fledged ; and that they can be kept in an aviary, or in a bell-shaped cage, on Nightingale's food. Mr. Herbert kept some for some time during the winter on egg and meat, and they grew quite tame ; they always roosted packed as closely as possible together on the perch. A severe frost killed them in February. If reared from the nests, the Gold-crests should be kept in a trellised room or aviary in which a small pine or fir tree could be placed ; a little fresh earth should be given for them to peck at, and they must have a supply of insects occasionally, and ants' eggs, and crushed hemp-seed : rape-seed is said to kill them. They ought to be kept in numbers : a solitary Gold-crest would be very wretched in a cage, and they always fly about in troops, associating

with Titmice, Creepers, and other small birds, who all hunt the same game together. Mr. Lord speaks of flocks of fifty or sixty Gold-crests, Tits, and Nuthatches in the pine trees in Columbia, "an army of insect-hunters, peering curiously into every crack and crevice," "singing, chattering, quarrelling, but never resting." Their song is melodious but weak, and they keep up a continual twittering as they dart and swing themselves about.

Mr. Wood relates a very interesting account of a family of six tame birds whom a lady fed during the winter in a large well-thatched aviary, which was open during the day. These birds, a Jackdaw, Magpie, two Skylarks, a Goldfinch, and a Robin, brought home with them, during very severe weather, a number of wild birds to share their food and shelter, and amongst them were two Gold-crests, who remained in the aviary till May, and ruled the whole bird community either by force or craft, getting any morsel they coveted away from the Jackdaw or either of the larger birds by jumping upon its head or back, and pecking it till it lifted the foot which held the morsel, which was immediately seized and carried off. If one of the Gold-crests had a tough morsel of meat, the other would pull off a piece, while his friend held it tightly in his bill, and then would perform the same office for him. There were sometimes nearly two hundred birds in this aviary, feeding upon the bread, barley, and fat meat provided for them by their benefactress, and the two little Kinglets reigned supreme over them all, and always roosted upon the backs of some of them, to profit by their warmth.

The Gold-crests make a beautiful soft warm nest, and suspend it to the branch of a tree, always placing it where it can be protected by leaves, cones, or branches. It is generally lined with feathers, and contains eight or ten tiny eggs.

The FIRE-CREST (*Regulus Ignicapillus*), called by the French *triple bandeau*, from three dark lines on the side of the head, is very like the Gold-crest in its general

colouring, but has a most brilliant orange or fire-coloured crest, and the sides of the neck are yellow. It is much less common than the Gold-crest, but must be treated in the same manner. Another, and still rarer species, the DALMATIAN GOLD-CREST (*Regulus modestus*), occasionally comes to England, and is so like the Gold-crest in its habits that it has been mistaken for it on the rare occasions of its visits to this country.



TITMICE.

The Parus tribe, or TITMICE, are easily recognized, having a strong family resemblance. They have all strong, stout little beaks, and are all insectivorous; but when insects fail, will eat oily seeds, and feed greedily upon carrion. They are murderous little creatures, and ought never to be kept in an aviary. The GREAT OX-EYE TITMOUSE (*Parus major*) will attack and kill other birds if at all weakly, and is particularly fond of eating their brains. In confinement it will eat meat, bread, cheese, nuts, and German paste, and is very fond of fat. It is a clever bird, and can be taught to perform various tricks, to draw up water, etc., but its murderous propensities and harsh voice make it a very undesirable cage bird. A smaller Tit, with a black and white head, called the COLE TITMOUSE (*Parus ater*) is a more amiable inhabitant of an aviary. It is so active and lively that it ought not to be kept in a cage: it is very amusing from its propensity to lay up a hoard of food for a time of scarcity; it will hide a quantity of seed in an obscure corner or niche in the aviary, and visit its hoard from time to time. I have read of a Cole Tit, kept in a cage by

itself, which used to empty the seed-box, and put the seed in a heap in the corner, and cover it over. Being left without seed for a day or two, he was obliged to have recourse to his store, but he ate very sparingly of it, and carefully covered it over again, eating no more in three days than he generally did in one. This Tit is found in most parts of Great Britain, and often consorts with Goldcrests and Crested Tits, in flocks in the pine forests, eating insects and their eggs and larvæ, and the seeds of the pine and fir trees, and concealing a stock of these under the rough bark for a time of need. It must be fed on Nightingale's paste, seeds, insects, and ants' eggs; but it is a delicate bird, and often suffers from unnatural food.

The MARSH TIT and BEARDED TIT would require much the same treatment if kept in confinement, but they are not common birds in England, excepting in the low swamps and marshes where there are old willows and alders. The CRESTED TIT is still more rare, inhabiting the pine forests in the north of Europe, but occasionally breeding in Scotland. It is a very pretty bird, with a pointed crest of black feathers edged with white; but very delicate, and not easily tamed, unless when taken young, when it must be fed on chopped mealworms and ants' eggs.

The BLUE TIT or TOM TIT (*Parus cæruleus*) is one of our most common birds, and is exceedingly amusing, tripping over the branches, and looking more like a blue mouse than a bird, running so swiftly about among the twigs. It is a very voracious little creature, and devours an immense number of insects; but as it often bites off the buds of fruit trees in which a maggot is concealed, it is unjustly suspected of injuring them, whereas it does good service in ridding the tree of future devourers. The Blue Tit will eat eggs and any kind of meat and carrion, and is very fond of fat; peas, oats, and other grain too will not come amiss to him. He is a most pugnacious little bird, and is continually at war with his own species,

and ought never to be kept in a cage with other birds, for if he cannot injure them as severely as the Greater Titmouse does, he is quite as quarrelsome and mischievous, and is continually teasing his companions, hanging round their necks when they are eating any titbit to which he may take a fancy, and forcing them to drop it, or pulling their feathers out. Mr. Thompson tells of a Blue Tit confined in a cage covered with close netting, which it several times cut through, and escaped into the room. It would fly to the children, and seize upon a piece of cake or bread that any of them had in its hand, persecuting the youngest child so much for a piece of apple one day, that she ran crying out of the room. The female Blue Tit is exceedingly brave in defending her nest and young against all assailants, puffing out her feathers, and hissing like an angry kitten. One of this Tit's provincial names is the Billy Biter, from the use it often makes of its strong beak. It is also known as Tom Tit, Bluecap, Blue Bonnet, and Nun. It builds in strange places—sometimes in the hat of a scarecrow, the cylinder of a pump, a bee-hive, under a turned-up flower-pot, flying in and out at the hole, etc. The Tom Tit soon becomes tame in captivity, and may be treated like the Greater Tit. It is very fond of bathing. If kept in a cage, it should be in a spacious one, with very close wires or covered with netting, and have several companions of its own kind; but a much pleasanter plan for seeing these birds to advantage has been adopted by a lady, who has kept a small basket outside her dining-room window, filled with beef or mutton fat, uncooked, for the last four or five winters. The Greater Tit, the Cole Tit, and the Blue Tit come to this in numbers, and look very pretty clinging to the handle and sides of the basket. She put a cocoa husk prepared for birds to build in above the basket one spring, and furnished it with tow and cotton wool; and although the birds did not build in it at first, a Blue Titmouse took possession of it for roosting

in when the cold weather returned, and the next spring a pair began to build in it, laid seven eggs, and hatched them in due time. The hen was so tame that she would allow herself to be carried about in the husk while sitting on her eggs, hissing and setting up her feathers when touched, but never flying off. Her mate brought her a green caterpillar every four or five minutes, and occasionally took her place on the nest. When the young birds were hatched, the caterpillars were brought to the nest almost every two minutes, from early morning till late at night. When all but one had flown, the lady detained it for a few hours, to take its portrait in water-colours, and after holding it in her hand awhile, put it into a cage, and the old birds fed it through the wires till she released it. This spring the same pair, as she supposed, returned to the husk, and have a family in it again. They quite understand her kind feeling towards them, and are undisturbed even by a large outside blind which is put down over the window and covers the husk. She tells me the Titmice do not resort to the basket of fat during the hot weather, but if a cold day intervenes they eat it eagerly, apparently requiring the caloric supplied by the fat during the cold. Robins, Thrushes, Sparrows, and Finches continually visit the basket also during the winter.

The LONG-TAILED TITMOUSE (*Parus caudatus*).—This bird is known throughout England by different local names — “Long Tom,” “Bottle Tit,” “Poke-pudding,” “Long-tailed Mag,” “Muffin,” and “Mum-ruffin.” It often associates with the Cole Tits and Blue Tits, but is more generally seen in flocks of twelve or fourteen of its own species. It is said to feed entirely on the small insects infesting the branches and leaves of trees, and on the larvæ of flies, and on this account it is very difficult to keep in confinement: to reconcile it to any other food has been repeatedly tried in vain. It builds a very curious nest, like a bottle hanging down from the branch, of moss

and lichens, lined with feathers, with a small hole near the top; sometimes it has a second entrance door. Some nests have been found with sixteen eggs in them, and the young birds seem quite to distend their house by their movements. The Long-tailed Titmice are continually flitting about among bushes and trees during the day, and towards evening gather themselves into a compact mass, fighting for the inmost place, till they have established themselves for the night.



WAGTAILS.

There are several species of these birds known in England, so called from their curious habit of jerking their tails while running along the ground. The **PIED WAGTAIL** (*Motacilla Yarrellii*) is constantly to be seen in the neighbourhood of a pond or brook, and Mr. Yarrell says it is a clever fisher, and snaps up the smaller minnows and fry when they come to the surface. It often runs about on the ground near horses and cattle at pasture, pecking at the insects which they disturb, and follows the ploughman in order to pick up the grubs turned up by the plough. It is a very pretty bird, and is so merry and lively, and so amusing in its rapid movements and darting flights, that several people have tried to keep it in confinement, and it is said to do very well in an aviary, especially if reared from the nest, when it may be taught to fly in and out of it, and to catch insects for itself. It must be fed upon ants' eggs, mealworms, and various insects, and will learn to eat the Nightingale's paste, and is fond of bread and meat occasionally. In winter it will often come close to the house, to pick up crumbs or other scraps, or perhaps the insects attracted to them; but in

Wagtails.

71

summer it generally frequents the banks of streams and ditches, and feeds a good deal upon aquatic insects. The country people often call it the "Dish-washer," from its love of water, and the "Washerwoman," its habit of beating its tail on the ground resembling the process of beating the linen by the river-side, common in countries where the washing is done by the side of rivers and streams. The Pied Wagtail has a sweet and varied song, but does not sing so loudly as the GREY WAGTAIL (*Motacilla campestris*), or so sweetly as the YELLOW WAGTAIL (*M. flava* or *sulphurea*), sometimes called RAY'S WAGTAIL. The former is a very pretty bird, more slender and with a longer tail than the Pied Wagtail. It is grey, with a black throat and chin, black and white tail and wings, and the under part of the body is of a bright yellow, but during the winter months this colour fades into a very pale yellow, and the black on the throat becomes yellowish-white. This bird remains all the winter in the south of England, but is said to migrate from the northern counties. It is not such a familiar bird as the Pied Wagtail, but is said to have a peculiar fancy for flying against windows and pecking at the glass, either attracted by the flies crawling up the panes, or to see their own image reflected in it, which would seem most likely: many birds delight in the small mirrors which are sometimes placed in an aviary. The young birds may be reared on ants' eggs, and bread soaked in milk, and are very fond of hard-boiled egg, which, mixed with Nightingale's paste, should be the food of the adult birds. The Yellow Wagtail may be treated in the same manner. It is only a summer visitor to this country, and is known in some parts as the "Oat-seed bird," because it generally resorts to fields in which oats are grown, on its arrival in England; but it is wholly an insectivorous bird, and, with its relatives, renders us great service by its destruction of noxious insects.

THE PIPITS

Appear to be a link between the Wagtails and the Larks. They resemble the former in the movement of their tails, but their plumage is more of the colour of the Larks', and some of them have their long hind claws. There are three species of Pipits, called the MEADOW PIPIT, TREE PIPIT, and ROCK or SHORE PIPIT. The MEADOW PIPIT (*Anthus pratensis*), called also the "Titlark," "Titling," "Song-bird," and "Moss Cheeper," is very common in stubble and turnip-fields, and will run about the sheep feeding in the latter, and pick up the insects and worms. They are gregarious birds, assembling in flocks, and roosting together on the ground at night. The female is said to cover her nest, which is generally on the ground, with dead grasses, when she leaves the eggs or young. This bird has a feeble plaintive song, and sings on the wing, but on the descent, instead of in ascending, as the Lark does.

The TREE PIPIT (*Anthus arboreus*) is a much better songster, and sings in a curious manner, rising from the topmost twig of a tree and fluttering onwards as it sings. It has a short hind claw.

Both these birds are kept in cages and aviaries. They feed chiefly on insects, grasshoppers, beetles, and small caterpillars, but seeds are sometimes found in their crops. They require a varied diet in confinement—mealworms, ants' eggs, the Nightingale's paste, crushed hemp-seed, etc. The Tree Pipit is the more delicate of the two, but both birds are subject to atrophy, and require great care and very nourishing food during the moulting season. At other times, too, their feathers are apt to fall off. The young birds may be reared on ants' eggs and bread soaked in milk. They are very docile, and will learn to imitate the

songs of other birds. They are very clean birds, and require plenty of water for bathing.

The ROCK or SHORE PIPIT (*Anthus petrosus*), sometimes called the Mudlark and Dusky Lark, is a common bird on the southern shores of England, feeding chiefly on aquatic insects and small shell-fish. It is a very sprightly bird, and has a very sweet musical song. Bechstein says it may be treated like the other Pipits, but it is not easily accustomed to the food of the aviary. He recommends a cage of the same description as that recommended for the true Larks, only with two perches in it, as most suitable for the Pipits.



LARKS.

The SKYLARK (*Alauda arvensis*).—I have had some doubt whether I should include this bird in my notices of cage birds, because I am unwilling even to think of him in imprisonment: his whole nature so unfits him for cage life, and his instinctive desire to soar into the air while singing is so great, that, if kept in a cage with a wooden top, he often hurts himself seriously by springing up against it. As, however, Skylarks are frequently caught and sold by bird-catchers, and occasionally a nest-full of young birds comes into the possession of those who are anxious to make them happy, it may be well to give some directions for making prison life less intolerable to them. And, first, the Skylark must have a roomy cage, long enough to allow him a run, the longer the better, and moderately high; the roof of the cage must be of green baize or cloth, and the back should be boarded. It should be without perches, and the floor must be covered with red gravelly sand and powdered chalk, with old mortar bruised. This he delights

to roll in and dust himself with. He should have a fresh-cut piece of turf every day if possible, or at least three times a week; this may be kept fresh by watering it and putting it in a saucer. The food and water should be put outside of the cage. The young nestlings are very difficult to rear: they should be old enough to have their tail-feathers nearly an inch long, before they are taken from the nest. The young males are nearly yellow, and the females greyish-brown. They must be fed from the early morning till it is dark at night, once in two hours, with scalded crumbs of bread, scalded rape-seed and crushed hemp-seed, and ants' eggs. When old enough to feed themselves, the yolk of egg hard-boiled and mixed with grated bread crumbs should be their chief diet, varied with a mealworm every day, ants' eggs, German paste, sponge cake, a little lean meat now and then, watercresses, lettuce, and cabbage. In a wild state the Skylark feeds on insects, seeds, and oats. The young birds should not be placed in the room with other birds when they begin to sing, or they will take their notes. They sing best in a cage, and this should be placed in the open air on every sunny, warm day, so that they may have plenty of fresh air. They are apt to get their feet dirty and clogged with hair, wool, or any loose substance of the kind in which they can entangle their long claws, if allowed to range the room or aviary; and if they are not very carefully cleansed, they will become lame or lose their claws. Larks are subject to all the ailments to which tame birds are liable, and especially to diarrhœa, for which they should have some saffron put into the water-glass, and a little grated Cheshire cheese, old and dry, mixed with their food; or a little ground rice may be given them, and now and then a small spider. The Skylark has one malady peculiar to it: the skin at the root of the beak becomes yellow and scabby, and for this it should have cooling food—watercress or lettuce, and ants' eggs and mealworms.

In garden aviaries, where they can have plenty of air and exercise, Larks have been known to breed occasionally. The hen will frequently lay eggs in confinement, but will very seldom sit on them. She is, in her natural condition, a very affectionate mother, and many instances are recorded of her carrying her young out of a field invaded by mowers, sometimes in her beak and sometimes on her back. An anecdote is told by Mr. Blyth of a hen Skylark, who would not leave her nest even when the mowers levelled the grass all around her, and they actually shaved off the upper part of the nest without injuring her. A young man who witnessed this, went an hour after to see if she was safe, and found that she had constructed a dome of dry grass over the nest, with an aperture on one side for ingress and egress, during the interval. Both male and female, though naturally shy and timid, are very bold and fearless during the nesting season, and will attack any bird that approaches their nest: their peculiar mode of rising from their nest helps to conceal it. Their legs are very long, and the strong toes are detached throughout, so that they can walk among rank grass, and can spring clear of it, leaping upwards of two feet into the air before they put their wings in motion. Their spiral flight, and their joyous song as they ascend into the sky, are too well known to need record here.

The WOODLARK (*Alauda arborea*).—The Woodlark's song is very much prized, and ranked by many amateurs next to the Nightingale's; he sings far into the night. This bird is more easily tamed than the Skylark, and appears more happy in captivity. He is of an affectionate disposition, and if pains are taken to gain his affection he will become much attached to his owner; but he is a delicate bird, and dainty in his appetite, and requires variety in his food. Most of the Woodlarks perch, therefore he must have a square perch put into his cage; but if he does not use it, it should be taken away. A cage similar to that of

the Skylark should be provided for him, long enough to allow of his running backwards and forwards. He must have a fresh-cut turf, if possible of clover, three or four times a week, and plenty of gravel and chalk. His legs are as brittle as glass, and if he gets his feet clogged with dirt or hair, etc., they must be soaked in warm water and very carefully cleansed. He sings best when allowed to range a room or aviary, but requires warmth, and suffers much in moulting. He is subject to tympany, and must be relieved by pricking the swollen part with a needle to allow the air to escape; and to obstruction of the oil-gland, which should be pierced and anointed with fresh butter. His claws will sometimes grow diseased and drop off, and for this there is no remedy but the preservative of cleanliness. In addition to the Skylark's food, the Woodlark may have sweet almonds blanched and macerated, with hemp-seed and roasted bullock's heart. He is very fond of a paste made of the crust of a French roll soaked in cold water for half an hour, squeezed dry, and added to three teaspoons-full of wheat flour, half a teaspoon-full of brown sugar, and an ounce of grated carrot; this should be well mixed and rubbed through a sieve. All these are delicacies; the daily food must be hard egg and bread crumbs. In its natural state the Woodlark eats insects, grubs, and seeds of various kinds, and green food, the young shoots of wheat, etc. It sings perched on the branch of a tree or circling in the air, and rises nearly as high as the Skylark. It is a smaller bird and yellower than its relative, and has more red about its breast. The hen is a larger and handsomer bird than the cock, and, as it sings a little, is often mistaken for its mate. Some Woodlarks are obstinate and whimsical about their song, and will not sing when anybody is in the room. In this case the cage should be hung outside the window. The young birds can be reared in the same way as those of the Skylark.

FINCHES.

Hitherto I have written of soft-billed birds, feeding on insects: I come now to those which have hard bills, the seed-eaters, which are much more adapted to a cage life. The Larks appear to hold a middle rank between the two kinds, as they eat seeds as well as insects; but they are often classed amongst the great tribe of Fringillidæ, perhaps because their beaks are not toothed like those of the soft-billed birds; yet they require soft food, like the Nightingale and other warblers.

The extensive family of Finches comprehends Grosbeaks, Buntings, Weaver-birds, Tanagers, and Finches proper, and most of the little foreign seed-eating birds.

The first of which I shall treat is the Canary, the cage bird *par excellence*, a thoroughly domesticated bird, perfectly happy in confinement, and breeding and rearing its young both in the cage and aviary without difficulty.

The CANARY (*Fringilla Canaria*).—The green bird of Teneriffe and the Canary Isles has become greatly altered in plumage and song by a long course of cross breeding; but the original colour still appears in many of the birds bred in England, and these are generally the strongest birds. Canary societies and exhibitions are consequences of and incitements to the popularity of this bird, and breeders desire to obtain great varieties in the markings of the plumage. Prizes are given for "even marked" and "unevenly marked" or "ticked" birds; in which the patches of green or black are either uniform, or irregular, in a yellow or mealy bird. There are also "Jonques," "Mealy birds," "Buff," "Flaxen," "Cinnamon," and "Lizard" Canaries, "German," "Belgian," "London Fancy," and "Norwich" birds, for which prizes are given according to rules laid down for the guidance of exhibitors in the several classes. The birds named according to colour need no

description, but the Lizards are distinguished as "golden" and "silver-spangled," and they are of a bronze green throughout, excepting the crown of the head, which is yellow in the golden-spangled bird, and white in the silver-spangled Lizard. The markings or spangles of the feathers are very regular, and the birds should have no yellow or white feathers in the wings or tail; but these always come when the bird is two years old, and prove that the Lizard is not a distinct species of Canary. Neither is the Cinnamon bird: distinguished as "Jonque" and "Buff Cinnamon." The German Canaries are by far the best songsters of all the Canaries, but many are sold under this title which do not deserve the name. The true German Canary has a very sweet, soft song, full of beautiful trills and shakes, not so ear-piercing as the ordinary Canary's song. It is not so beautiful in plumage or in shape as most of the other kinds, being generally small, short, and thick—a plump little bird with a large throat: but it will sing all day long, and by candlelight, and under most adverse circumstances; and it is generally very sensible and affectionate, and easily tamed. The Belgians are not usually prized for their song: they are very long, slender birds, standing very high on their long legs, with such extremely high shoulders as to look humpbacked: those which are considered the most perfect seem to me quite deformed—I do not admire them at all. The "London Fancy" birds have degenerated so much of late years, from repeatedly breeding from the same stock, that they are now very small and weakly. The perfect bird should be of a deep golden colour throughout, excepting in the wings and tail, which should be black. The Norwich birds are sometimes similarly coloured, but they vary very much in plumage: the distinctive name is due to the size and shape of the bird, which should be large and square, with a massive head. Ordinarily the colouring is either deep yellow (not lemon-coloured), or a mixture of yellow and

white, called buff, in the "clear" birds; the others are regularly and irregularly marked with dark spots. I have a beautiful Norwich bird now, so called because his progenitors came from Norwich, reared by myself, with a deep orange-yellow head and body, and black wings and tail, into which, however, after each moulting since he has been two years old, have crept one or two white feathers. The Crested Canaries are now becoming favourites: the yellow birds with black crests are very pretty, but it is not easy to get them with regular, smooth crests.

I have kept Canaries for many years, and I find that they will live very happily together, males and females, all through the autumn and winter, in a cage from three to four feet long, and two feet high and wide. This is placed on a stand surrounded by plants in pots, at a south window on a landing-place, without any apparatus for warming it. They are covered up very warmly at night during the cold weather, and they never appear to suffer at all from the cold. On sunny days the window is opened, but care is taken to prevent them from being exposed to a cold wind or draughts, always most injurious to birds. Canaries are sufficiently hardy to live out of doors in warm parts of England, at Osborne in the Isle of Wight; and in Mr. Wollaston's shrubberies at Welling in Kent they are becoming naturalized; but birds born in the house would, I think, suffer from cold if no provision were made for sheltering them during the frost and snow of winter. This I believe Mr. Wollaston supplies them with, keeping a cage in a greenhouse, with an opening of the same kind as the entrance to a bee-hive, but larger, for the birds to resort to in case of inclement weather. It is well, of course, to make Canaries hardy, and they will live in an outdoor aviary if care be taken to protect them from cold during the winter nights; but I have been told that they rarely sing as constantly as the birds in the house, and on cold sunless days will often look moped and ruffled, and appear

to feel the cold intensely. They are generally much less tame than the house birds, too, and therefore no object seems to be gained by placing them out of doors, unless they are allowed to range the garden and shrubbery at pleasure, and means are taken to protect them from all invading foes, so that they may be able to build and rear their young in safety. My birds, having never known liberty, are perfectly happy in their large winter cage, and welcome their visitors gladly, instead of fluttering about in alarm when any one goes near them. Such a cage as this should be open on all sides, domed or waggon-shaped, and wired with tin wire, unless made of lacquered brass, which must be freshly lacquered once in two years. This is handsomer in appearance and lasts longer: the tin wire will always become blackened by time, but the rust on it is not unwholesome, whereas the green rust on common brass wire, when corroded, is poisonous to the birds. The wood should be either mahogany or varnished deal; the former is the best—less liable to warp and less likely to contain insects than the latter. The seed should either be put into “bird-hoppers” or in long covered boxes outside of the cage, with china or glass trays to take in and out of them. The hoppers keep the seed clean, and the birds peck it down, and scatter away the husks. The water should either be placed in glass fountains, the mouth of which goes into the cage for the birds to drink from, or in similar trays in boxes to those of the seed-boxes. The object is to keep both seed and water from becoming dirty and from being scattered and splashed about: some birds waste their seed a good deal, and if a great quantity is pecked out of the hopper, it is well to examine it carefully lest it should be bad, musty, or tainted by mice, and so distasteful to the birds. The old-fashioned bird-glasses are objectionable, not only because they sometimes slip on one side, so that the bird cannot reach the hole, for this exhibits an amount of carelessness as to the comfort of

our little prisoners which is not to be tolerated, but because, if very full, the seed and water fall into the cage, and if not filled up well, or if the water is sprinkled about by the birds, they are often obliged to stretch their little necks painfully to reach their food. Sometimes, too, the young birds contrive to get into the glass, and are in danger of suffocation or drowning, as they cannot turn round to come out again. A fountain in the middle of the cage looks exceedingly pretty, but it becomes so dirty in a few hours that I do not recommend its use. A bath, wired round like the cage, should be fastened on the doorway, and in this the birds should have a bath every morning, unless on a very cold sunless day. When they have all washed, however, it should be removed, as some birds are so fond of washing that they will go in and out of the bath again and again, till they become completely chilled.

In winter, the water in which they bathe must never be quite cold. It is well to have a second board and two sets of perches for a large cage, as these can be washed and dried after being splashed by the birds. Coarse gravelly sand must always be spread over the board, and the cage must be thoroughly cleaned out every day. The perches should not be fastened to the cage, but be removable at pleasure: they should be round and smooth as a bamboo. A swing suspended from the centre of the cage is a source of amusement to the birds. They much enjoy a pot of mignonette or chickweed, and soon devour every flower and leaf. A fir-branch may be given to them occasionally too: of course any plant injurious to Canaries must not be put within their reach. Plantain-stalks and millet in the ear are very good for them, especially in winter. All birds like variety in their food, and although sugar and sweet cakes are forbidden dainties, cracknels and plain biscuits are good as occasional luxuries. The staple food must be canary and bird turnip-seed (the small summer rape-seed),

a small quantity of hemp-seed on cold days, and a pinch of maw or poppy-seed occasionally, always to be given during moulting. When the birds are building, they must have hard-boiled egg chopped very small, and stale bread crumbs, grated and mixed with a pinch of the same seed, every day. This egg food should be always freshly mixed and given; if left to become sour it will kill the birds. Stale sponge cake is the best substitute for it if eggs are very scarce; but this will not do for the young birds. While the hen is sitting she can do without the egg food; but as soon as she is about to hatch, a supply must be put into the cage for the nestlings to be fed upon. Chickweed, groundsel, or lettuce should be given to Canaries three or four times a week, excepting during the breeding season: if not given often they will eat so greedily of green food as to make themselves ill.

Whole oatmeal or groats should be given to them every day, sometimes a piece of bread soaked in milk, not boiled (unless given as medicine); a little lump of bay salt, or a piece of cuttle-fish or old bruised mortar, they will like to peck at occasionally; and a slice of apple, pear, and potato now and then, or rice pudding. Birds that are accustomed to receive these delicacies from their mistress's hand will look and *ask* for them whenever they see her, and they will help her much to win their affection. They require warmth in moulting (always a trying season to birds), and plenty of nourishing food: a rusty nail in the drinking water acts as a tonic if they appear weak, and a small piece of Spanish liquorice is good for hoarseness. I have seldom found any remedies of much avail to birds, excepting boiled milk by way of an aperient, a lump of chalk if they have eaten too freely of green food, and a warm bath when they are moping or egg-bound. Mr. Kidd recommends a very small quantity of raw beef, scraped, and moistened with cold water, once a week during moulting, and other bird-fanciers give spiders and ants' eggs; and perhaps these may be

useful now and then, as most birds are partial to insect food. But meat can hardly be required for seed-eating birds, and I have heard instances of its doing them great harm when continually given, by fevering their little bodies to such an extent as to cause their feathers to fall off, and exciting in them carnivorous propensities, which made them attack their companions viciously. Hard egg or stale sponge cake would be much better for birds when they require especially nutritious food. For surfeit or inflammation, or an egg-bound hen if very ill, two drops of castor oil might be given with good effect; brown sugar is good for a hen under such circumstances. Cage birds are occasionally troubled by hardness and obstruction of the oil-gland above the tail, at which they are continually pecking: this should be anointed with fresh butter, and if very bad, gently pierced with a fine needle before applying it.

When old birds become weakly and drooping, a little sponge cake steeped in sherry may do them good, but this must be sparingly given, or it will fever the bird and produce inflammation. A warm bath at 96° is very useful to an egg-bound hen, but great care must be taken against breaking the egg in holding her in the hand. This is a safe remedy for most ailments to which birds are subject: they must be held in the hand so as to immerse all but the head in the water, for three or four minutes; then taken out and well dried, and placed in the sunshine or near a fire, to get their feathers thoroughly dry. The feet will sometimes get clogged with dirt, or with the materials for the nest, and if the bird is not fond of bathing, and will not cleanse them, they must be soaked in warm water and carefully relieved of their "clogs." An old bird's claws will sometimes grow so long as to prevent its perching comfortably, in which case they must be very carefully cut with a sharp pair of scissors, taking care not to draw blood. It is better, however, to avoid catching birds as much as

possible, especially if they are wild and fly about in alarm. They often do themselves harm by their fluttering: when ill they are generally quiet enough to submit to be taken up to be put into a bath. All cage birds should be tame enough to recognize their mistress as a friend, and not to flutter about wildly at her approach; and then they will tell her of their wants, go down to the glasses if they want fresh food or water, look up at her and chirp, and pull her hair perhaps, if they want materials for a nest, and attract her attention to their nestlings if anything is amiss with them; and they will generally allow her to take them up in her hand, without rushing frantically about the cage as a new or untamed bird will do.

Early in spring, towards the end of February, if the season is warm, or early in March, the hen Canaries must be removed from the cock birds, or they will fight with one another for the favour of the ladies to whom they take a fancy. At the end of March or at the beginning of April, if the weather is cold, the pairs may be put together. If they build too early in the year, and the young birds are hatched in cold weather, they often suffer from it, especially if the hen does not cover them constantly. It is not wise to allow the birds to choose their own mates: in order to produce strong and beautiful offspring, careful selection is requisite; an old cock and a young hen, or a young cock and an old hen, should be mated; and the colours should be well contrasted; for instance, a jonque cock should have a mealy hen, and a green bird a yellow mate, and so on. A clear deep yellow bird without a spot of black about him, should be put with a variegated green and white hen, to produce even-marked and ticked birds. Some of the young birds will as a rule follow each parent in colour, and have a much better plumage than if two birds of the same colour were mated. Two crested birds must never be put together: the progeny will probably be baldheaded. A still stronger reason for not allowing birds

to select their mates themselves, exists in the fact that birds of the same family cannot be paired with impunity. Two of my birds were mated by mistake who were brother and sister, and almost all their young were feeble, blind, or deformed; and this is frequently the case, I believe. When the pair have made friends, and the cock bird begins to feed the hen, they may be put into a proper "breeding-cage," or into a common wire cage with compartments. Birds are sometimes put in pairs in an aviary or large cage, with nesting-boxes or baskets in the corners, but it rarely happens that matters are carried on amicably thus. One box or basket is selected by two hens, perhaps, and neither will be persuaded to build or lay their eggs in any other box or basket; consequently, there will be constant combats over the right of possession, and when one hen succeeds in establishing herself on the nest, the other will stand by her till hunger drives her to the seed-box, and then she will take possession of the nest. Then jealousies and rivalries will occur both between the husbands and their wives: each pair will do far better apart, either in an orthodox "breeding-cage" sold for the purpose, or in a cage divided into compartments (with a space between each), in which the nest-boxes or baskets are placed. There is some advantages in the breeding-cage alluded to, and those birds who are shy and court retirement for their nursery cares prefer them: they should not be less than twenty or twenty-four inches long, by twelve wide, and fourteen or sixteen inches in height, boarded at the top and back, and with wired front and sides. They are sometimes boarded at the sides, but the nursery compartment gets so close in hot weather that the wired ends are far preferable, and a piece of brown paper or brown holland can be placed over the upper part. Underneath the part partitioned off for the two nest-boxes, should be a compartment for the young birds to be placed in when it is necessary to remove them from their parents. The ob-

jection to this cage is that the nest-boxes are necessarily placed so high up in the cage that the young birds sometimes fall out, and get seriously injured in consequence. One of mine had a broken back, and another a dislocated leg, from an accident of this kind, when they were quitting the nest. Moreover, it is not so easy to keep clean as the more open cages, and the perches are generally fixed into the wooden back. Therefore I much prefer using an open wire cage, with a movable wire partition at one end, for the nursery for the young birds; and hanging up boxes or baskets for the nests in the larger compartment, at a moderate distance from the floor, so that the young birds are in less danger of becoming seriously damaged by a fall from the nest. Some hens, however, will not build in a box placed low in the cage, and when this is the case, they must be allowed one placed nearer the top, which can be moved when the young birds are nearly fledged. All hens like to have a covering over the top of the cage, to give shelter to the nest. Some prefer baskets to boxes; but they are often lazy about building a nest in these, whereas they cannot well dispense with one in a square box, though even in this, some hens will content themselves with putting the nest materials in, without taking the trouble to arrange and weave them together. In this case, it is best to make a nest of moss, cow-hair or deer-hair, and cotton wadding, using this last sparingly, lest the birds should get their claws entangled in it. They will generally lay their eggs contentedly in this, but if they pull it out of the box and scatter it about, they must be left to their own devices till the young birds are hatched, and then, if the mother bird is not very wild, she will allow a little arrangement to be made for their warmth and comfort. Any change, however, must be made very cautiously, for some birds exceedingly object to their nestlings being touched, and will desert them if they are meddled with. The nest materials should be hung up in a net, if possible, outside

the cage, or they will soon be scattered all over it; they need a little wool to felt into the harder materials, and some birds will not build without it. The hen lays four or five eggs—one each morning as a rule; sometimes she will begin to sit as soon as she has laid the first, but it is best to leave her to herself, and not to substitute ivory eggs, as is sometimes done, unless she shows a disposition to eat her eggs; and if this is the case, either with her or her husband, they are not likely to succeed in their nursery. But the attempt may be made to take them away till the hen is ready to sit, and then give them back to her. She will sit thirteen or fourteen days. If after waiting a day or two no young birds appear, the eggs should be put into warm water for a minute: if they float they are in all probability addled and useless; but if they sink, they may be replaced in the nest for a day or two: if not hatched then, they should be taken away, or the hen will go on sitting in the vain hope of hatching birds which are dead. The egg food which I have mentioned, and which should be given to the birds as soon as they are mated, must be put into the cage in readiness for the first appearance of the young birds, and it is necessary to watch the old birds' proceedings, as now and then they are unnatural enough to leave them unfed, and occasionally the cock will maltreat them, and pull them out of the nest, or peck them. Some birds are very shy of being seen to feed their young, and it is very difficult to find out whether they perform their duties or not; others will delight in seeing them noticed, and will call our attention to their infant brood, apparently with very great parental exultation.

The father generally takes the greatest share of the duty of feeding the young, and feeds his wife also while she is sitting on the nest; but sometimes a cross-grained bird will be annoyed at her attention to them, and will not only neglect, but injure them. If he does this once, he must not be trusted again, but removed, as soon as the young are

hatched, to the next compartment, and the mother bird will bring up her brood by herself. If, however, the cock begins to feed the young birds, they may be left to themselves, but constantly supplied with food, till the hen begins to pick up materials for another nest; then another box or basket must be given to her at once, or she may, perhaps, drag the nestlings out of their nest in her efforts to make a fresh one. Sometimes she will lay her next set of eggs in the old nest among the young birds, and will even sit upon them with the first brood all around her; but this should not be permitted, and, as soon as they are fledged and able to leave the nest, they must be put into the nursery compartment, in which a nest can be placed for them to roost in at night. The father will feed them through the wires of the division for some time, but they must soon have some egg food placed within their reach, and, in due time, crushed hemp and canary-seed and water must be given to them, and they will gradually learn to feed themselves, though not without clamouring for food from the old bird whenever he comes near them. They begin to see when they are nine days old, and generally leave the nest at the end of a fortnight; when they are a month old, they may be removed to another cage, but the soft food and crushed hemp-seed must be continued till after the first moulting, which generally begins when the young birds are six weeks old, and tries their strength a good deal. They must now be put within hearing of a good songster: they will often begin to warble before they have done moulting, and they will need a singing-master. A German Canary, Nightingale, or Woodlark hung up in a cage near, but out of sight, will teach the young cocks best; and, if they hear no other bird singing, they will acquire his notes. I had a bird which sang exactly like a Nightingale, who had learnt in the same way. It is not easy to discover the sex of the young Canaries: the hens warble too, and, indeed, old hens will sometimes acquire a short song, sufficiently connected

to cause them to be mistaken and purchased for cocks; but there is much more movement in the throat of the cocks, and as the song becomes more powerful, this is more and more exhibited. During the first moulting, of course, birds require even more warmth and nourishing food than at other times; if the new feathers do not come easily, a warm bath might do good, but it must only be given on a sunny day. By degrees the young birds should be accustomed to a cold bath, and most of them will take to this eagerly when they see the old birds washing and preening themselves, and will imitate them; but some will refuse to go into the bath; and, if they are not accustomed to it in early life, they are very troublesome to deal with afterwards. I have purchased birds who never could be induced to bathe; but I have led them to partial cleanliness by sprinkling water over them, and sometimes after they have been wetted thus once or twice, they have gone into the bath, or have sprinkled more water over their feathers from the water-glass. It is of great consequence to accustom all birds to bathing; it will prevent a good deal of discomfort from clogged feet, and keep them from being infested with parasites, little red mites which torment them exceedingly, and which are very difficult to get rid of. Tobacco blown over their feathers and powder sold for destroying insects sometimes prove efficacious; and a bath of tobacco-water (a weak dilution) might be of use; but if a cage once becomes a harbour for them it is very difficult to dislodge them; and an old cage is a dangerous habitation if birds troubled with them have been kept in them. The "Zollverein" and "Pagoda" cages, made of metal, are sometimes recommended as less likely to become a receptacle for these pests; but they have the drawback of being very cold to the birds' feet in winter, and very hot, if exposed to the sun, in summer. They are generally very small too, and not nearly so convenient to the inmate of the cage as the mahogany and wire waggon-shaped cages. If these are kept clean and the birds

well supplied with baths, there will be no trouble about insects; but a bird newly purchased should be very carefully examined before he is admitted into the company of our little pets; and if he is dirty and ragged, and pecks continually at his feathers, and seems restless and out of order, the probability is that he is beset with some troublesome parasites, hidden underneath the feathers. It is not wise to purchase "nest-bags;" they are often receptacles for these creatures, and the poor little birds suffer greatly from them. It is necessary to change their nests when they become very dirty; but this must not be attempted, except with very tame birds who have entire confidence in our good intentions towards their young, until they are tolerably well fledged, as the mother bird will sometimes show her displeasure at having her nest meddled with by refusing to return to it. She may, perhaps, still feed the young birds; but if a cold night follows and she does not cover them, they will perish, unless pretty well covered with feathers. Some birds so much resent all interference, that one cannot venture to examine the nest closely; but it is needful to keep up some supervision, as a weakly bird may die in the nest, and, if it is not thrown out by the parents, it will remain trodden down by the living birds till corruption takes place. When it is necessary to remove them to a fresh nest, they must be handled as little as possible. They should be taken away from their mother as soon as she shows symptoms of a desire to build again. One of my birds began to pull out the soft feathers of the young birds and to line her new nest with them. She was not properly supplied with wool, and, I suppose, thought the coming brood would need the soft warm lining.

More than three broods in the year should never be permitted—the hen would become completely exhausted. If the two broods have been satisfactorily reared, it is as well to be contented with these; but some hens will continue laying till they moult, or even through the moulting season,

and this is very bad for them. They should be separated from their mates when this occurs: when they persist in sitting on a nest without laying, as they sometimes do, the nest and nest-box should be taken away. The hen sometimes suffers from sitting long in hot weather, and will come off her nest bathed with perspiration. A moderately cold bath and plenty of oatmeal would relieve her. The open breeding-cages admit so much more air than the boarded ones, that the hens do not suffer nearly so much from the confinement in these. My birds are used to being looked at, and do not mind it, so I use long cages with three compartments in each, and this accommodates two pairs: the centre compartment serves as a nursery for the children of both, while their respective parents feed them, and some division is necessary. If the two cocks were close together, they would probably fight through the wire division, and be too much engaged thus to attend to their wives and children. Some pairs do better out of sight of other birds, and must be put into a quiet room apart; but if Canaries are accustomed to be noticed and petted, they will become very tame and sociable, and thoroughly at their ease. If single birds are kept in small cages, and these are generally the best for good songsters (indeed, some birds refuse to sing in company, and prefer a very small habitation alone, to the bustle of an aviary or large cage full of other inmates), they will greatly enjoy an hour's liberty in the morning, and be much the better for a good flight round the room. I have a German Canary who always reminds me to have his cage door unfastened, by a succession of little piteous chirps: he takes a long flight as soon as his door is opened, and then perches upon the curtain-rod or the window-sill, and sings with joy. Then he will fly to the breakfast-table, and help himself to the bread: if there be any flowers in the room he will perch upon them, and demolish every bit of mignonette; and then he goes to the mantelpiece, where there is a small

French clock, and chirps, and sings, and flutters his wings to his reflection in the glass, which I suppose he takes for another bird, for I see him sometimes taking up crumbs of bread and pretending to feed it; he is a most engaging little pet, and sings deliciously. On a sunny, calm day, birds often enjoy the open window, and their cages may be hung outside; but care must be taken to shield them from a blast of wind, and to shelter them from the extreme heat of the sun. The cages which have a penthouse roof are useful to be put out of doors, as protecting the birds from the extremes of heat and cold which are so injurious to them all. It is cruel to leave birds exposed to these, or to allow them to remain out of doors late at night.

The GOLDFINCH (*Fringilla carduelis*).—This is a great favourite amongst cage birds, and deservedly so, for it is a very sprightly, beautiful bird, and is very affectionate, docile, and intelligent. It is very happy in an aviary; but I do not like to see a Goldfinch confined in a very small cage, as he is so restless that he is scarcely ever still, and is continually climbing about, trying all the wires of the cage, and twirling his beak along them. On this account he ought not to be kept in a bell-shaped cage, as he is apt to grow giddy. He is very easily tamed, and may be safely allowed a flight round the room while his cage is cleaned. He is capable of great attachment to his owner, and may be taught various amusing tricks, such as firing off cannon, dragging a little waggon up an inclined plane into his cage, opening a box for his seed, ringing a bell for it, and hauling up water from a little well underneath the cage; and all these he will learn very readily, and without any coercion. Some of the tricks which professional exhibitors of birds make a trade by, I fear, cause their Canaries and Goldfinches a good deal of suffering, and much cruelty is practised to make them proficient in them; but I have taught Goldfinches all the accomplishments named, excepting firing off cannon, without difficulty. and

they have appeared delighted to exhibit their cleverness. One of my birds lived in a cage made with a seed-box attached to the wooden back, and he always lifted up the lid when he wanted a seed, and soon grew so crafty as to take out two or three seeds at a time, and put them by his side between the wires. I taught him this in a couple of days by fastening a piece of silk round the lid, and gradually lowering it till it was quite closed; and he learnt nearly as soon to draw up a little silver bucket with water, from the glass which formed a well, suspended by wires from the bow window attached to his cage. In the floor of this was a hole, across which went a narrow bridge of wood, to which a little ring was fastened, attached to a tiny silver chain holding the bucket, which was about the size of a thimble. I drew the bucket up to the bridge at first, and fastened it while the bird drank the water, then let it down and refilled it, and drew it up nearly to the top, and I gradually left a longer and longer length of the chain between the bridge and the bucket. The bird soon found out that he must pull the chain up into the cage, but let it go while he drank, till he comprehended the necessity of holding it with his foot; and as soon as this was made clear to him his education was finished: he hauled up a bit of the chain, put his foot on it, hauled up another length, and held that, and so on, till the bucket came to the bridge, and he could drink out of it. He never forgot the art, and was often so proud of his cleverness that he would pause to sing, after he had drawn the bucket within his reach, before he quenched his thirst. This bird was never happy out of his cage, and when it was out of repair, and he had to live in a cage of ordinary construction, he pouted and moped, and was exceedingly displeased with his new abode. Of course care must be taken that the lid of the box is not heavy enough to distress the bird, while holding it upon his head, and that the machinery of the bucket, chain, and well is always in order: any hindrance to the bucket's fall

into the well to get refilled would be most serious, and cause the bird great suffering. A chain attached to a waggon may be drawn into the cage and held in the same manner, and the bird may be taught to ring a little bell by suspending it in a corner of the cage and leaving him without seed till he is hungry, pulling the string attached to it and ringing it, and then putting some favourite food into the glass. He will soon discover that whenever the bell rings he gets this food, and will seize the string and ring it whenever he is hungry. The Bullfinch and Siskin will learn all these accomplishments, but Canaries never understand the art of holding the chain with the foot when they have drawn it up; at least, I have never succeeded in teaching any of mine to overcome this difficulty. A mule bird, with Canary and Goldfinch parents, was very quickly taught it. Goldfinches will soon learn to come out of their cages for any favourite food offered to them, and to fly on the hand or shoulder to receive hemp-seed, of which they are very fond. A gentleman in Ireland had two pet Goldfinches whom he allowed to fly out of the window, who brought home several wild birds of their kind day after day during a very severe winter, to eat of the seed in their cage, and they were fed regularly as long as the cold weather lasted; as many as twenty flying into the room, into the open cages provided for them, undisturbed by any fear of their hosts.

The Goldfinch is a great friend to the farmer, for he lives chiefly upon the seeds of weeds, groundsel, burdock, and thistle, of which last he is so fond that he is often called the "Thistle-finch." Lettuce and cabbage-seeds he also approves of, and in confinement he should have these occasionally, his ordinary diet being canary and bird turnip-seeds: he is especially fond of hemp-seed, and will sometimes refuse to sing unless provided with his favourite food; but he must not be fed exclusively upon this seed, it will cause blindness and excessive fat. A few hemp-seeds daily

may be given to keep him in good humour, and these he should receive from his mistress's hand. "Goldie" or "Goldspink" as he is sometimes called, is a great eater, and is rather a greedy bird in an aviary, often driving other birds away from the seed-boxes. A thistle head should be frequently given to Goldfinches, also lettuce or cabbage-leaves, watercress, chickweed, and groundsel occasionally. They build a very pretty substantial nest of moss and lichen, lined with wool and thistle-down, in apple and pear trees ; and the female lays five or six eggs. The young males may easily be distinguished by a narrow white ring round the beak. They may be reared from the nest on bread soaked in water, and scalded rape-seed, and will learn the Canary's song if put within hearing of a good songster : their natural song has not much compass, but they are always twittering and chirping. The Goldfinch will pair with the Canary, and the mule birds produced are often very beautiful, and sing particularly well, but they are seldom prolific. The best mules have a Goldfinch father, and a clear yellow or white Canary mother. It is necessary always to remove the Goldfinch as soon as the first egg is laid, as he will often beat his wife off the nest and destroy the eggs. He may be put into the next compartment, and if he is a very amiable bird, he may perhaps assist her in feeding the young birds when they are a few days old ; but his proceedings must be very carefully watched when he is restored to his family, as he is not at all unlikely to peck his children. Most rearers of mules, I believe, take the Goldfinch away altogether, and give him another wife, leaving the first hen to bring up the nestlings alone. I have heard of a very beautiful mule bird which had the Goldfinch head and wings, and the rest of the body white.

Goldfinches are subject to epilepsy and to sore eyes. Lettuce-seed and thistle-down should be given, for the first disorder, which is probably occasioned by immoderate

eating (of hemp-seed in particular), and when the fit comes on, the bird should be plunged head downwards into cold water two or three times in succession, and have a drop of olive oil afterwards. He is fond of bathing, and should have a bath daily. The eyes may be cured by anointing them with fresh butter.

Goldfinches are sometimes found variously coloured, with white and black heads, yellow breasts, white and black bodies, etc. As they grow old, they will often lose their bright colours in confinement, but will sometimes live sixteen or even twenty years in an aviary. They are, however, subject to blindness in old age.

The CHAFFINCH (*Fringilla caelebs*) "Pie Finch."—The Chaffinch, called also the "Chink," "Pink," "Fink," "Shell-apple," and "Beech Finch," and in Scotland the "Shilfa," is not so much prized in England as in France and Germany. In Thuringia there is quite a mania for these birds ; and Bechstein enumerates a great many varieties of the Chaffinch's song under such names as these—the "double trill of the Hartz," the "Bridegroom's song," the "Sportsman's song," the "Woodman's song," etc., which he says are derived from the last syllable of the German sentence which the bird is supposed to utter. Some birds are said to have three or four distinct songs, but those which have only one or two generally sing with greater perfection, though perhaps they are less prized than those which have a greater variety of song. It is asserted that the Chaffinches frequenting one district sing quite differently from those in another : that those in Thuringia, in the Hartz Mountains, and in Austria, for instance, have different songs. Bird-catchers in England say the same of Chaffinches, caught in Essex and Kent, and declare that those found in Epping Forest sing a different song from those caught on the other side of the river. They have singing matches amongst their birds, and the Chaffinch that sings the greatest number of perfect notes within a given time

gains the prize for his owner. A perfect note is represented by the syllables *toll-loll-loll-chick-wee-do*, and if a bird slurs them over, or stops at *chick* or *wee*, the note is not counted. Chaffinches appear to be obliged to re-learn their song every spring, and begin it afresh, chirping, and mingling passages of it with their chirps, repeating these, and exercising their voices by degrees, till the full song is regained. This process the bird-fanciers call "recording," and if the song is perfect by the end of a week or fortnight they consider it a great proof of excellence in the bird. Great pains are taken in the instruction of young Chaffinches in Germany, and very large sums are obtained for those reputed good songsters, trained by some famous bird. Much cruelty also prevails, I fear, and the poor birds are frequently blinded, from the notion that they sing better in the dark.

The Chaffinch is a very pretty bird, and easily tamed, and can be reared from the nest on soaked bread moistened with water and scalded rape-seed. The young males are to be distinguished by having more white in the wings than the female, and the lower part of the body red instead of dingy green; the yellow circles round the eyes are brighter too. They should be fed chiefly on bird-turnip, with a little canary-seed, and should have crushed hemp-seed occasionally, but too much of this seed is injurious to them; groundsel, chickweed, and other green food, and ants' eggs and mealworms from time to time. In their natural state Chaffinches are partially insectivorous, and although they are fond of the young shoots of vegetables, and do mischief by eating them as soon as they appear above ground, they do great service by destroying numbers of aphides and other insects which would be far more destructive: they are very fond of the seeds of the dead nettle and groundsel. The Chaffinch builds the prettiest nest possible, deeply cupped, of moss, wool, hair, and lichens, in the fork of a branch where it joins the main stem. She

lays four or five eggs. Early in the autumn the birds separate, the males congregating together, and the females and young birds assembling in other flocks; from this circumstance the Chaffinch is called *Fringilla cælebs*. In the north of Europe he is a migratory bird, but with us a resident throughout the year, and the flocks of Chaffinches which haunt our hedgerows and gardens in winter, are increased by migrations from the Continent both during the severe cold and in the spring.

In confinement the Chaffinch is generally kept in a low, oblong cage; a bell-shaped cage makes him giddy, and he sings less in a large cage or aviary. If more than one Chaffinch is kept in a room, the cages must not be so placed as that they should see each other, or they are apt to turn sulky and refuse to sing. Their food should be kept outside the cage, as they waste it very much. They must have water for bathing as well as drinking. They are subject to diarrhœa and to obstruction of the oil-gland; and the old birds often become lame, and require the removal of the scales that will accumulate on their legs: this must be done very carefully with the point of a penknife. For a feverish cold, causing the root of the beak to become yellow and making the bird gape continually, bird-dealers give a mixture of equal parts of pepper, garlic, and butter. If well cared for, the Chaffinch will live for many years in confinement.

The MOUNTAIN FINCH or BRAMBLING (*Fringilla montifringilla*) is common throughout Europe, living chiefly in the northernmost countries during the summer, and visiting us in the winter. It lives on the same food as the Chaffinch, and will sometimes learn passages of its song; but it is an indifferent songster, and is chiefly prized for its beauty. The head and back of the male are black, the feathers edged with yellowish-grey, so that the upper part of the body has a freckled appearance; the lower part of the back is white, which colour extends to the tail-

coverts; the tail itself is black and forked; the wings are brownish-black, striped with orange bands; the throat and breast pale orange, shading to white in the lower part of the body.

The Brambling appears to be capable of being tamed, but some individuals of the species are quarrelsome and spiteful, and are not pleasant inmates of an aviary on that account. They require the same food and treatment as the Chaffinch.

The SISKIN or ABERDEVINE (*Fringilla spinus*), sometimes called the Black-headed Finch, Gold-wing, and Barley-bird, is a winter visitor to England, and builds in the forests of pine and fir trees in the north of Europe, and occasionally in the Highlands of Scotland. It has a pretty mixture of black, green, and yellow in its plumage, and is shorter and more thick-set than the Goldfinch, and a very active, lively little bird, very amusing in a cage, because it is such a mountebank, always climbing about, moving along the top of the cage, swinging by one leg with its head downwards, and placing itself in all kinds of extraordinary postures. It is very tame and sociable, and can be taught all the accomplishments learnt by Goldfinches; it is quite happy in captivity, and a useful bird in an aviary, because its continual twittering excites the other birds to sing. Its natural song is not powerful, but sweet; the sweetness, however, is often interrupted by harsh, jarring notes; and although it will learn the songs of other birds, it can never be taught to whistle a tune perfectly. It is very good-tempered, and agrees with other birds very well, though it is rather a greedy bird, and will sometimes take possession of the seed-box in an aviary, and drive them away from it. It drinks a good deal, and throws the water over its feathers continually, so that it requires to be constantly supplied with water, though it does not often go into the bath. It should be fed on canary and bird-turnip, with hemp-seed occasionally, feeding naturally on fir and pine, alder, hop,

thistle, and burdock-seeds, and assembling in flocks near brooks and streams where the alders grow in England. Siskins will build in a bird-room or aviary, if provided with a fir tree, and pair readily with the Canary. The offspring of the Siskin and Green Canary are said to be the strongest birds, but the mules produced by the Siskin and Yellow Canary are much the most beautiful: they are generally good songsters. They often associate with Linnets.

Siskins are generally healthy birds in captivity, but are somewhat subject to epilepsy and to diseases produced by over-eating. They should not be confined in a small cage, but be allowed to take plenty of exercise. They are very fond of nuts and almonds, and will soon learn to take them from their mistress's hand, and to become very familiar and friendly with her.

The LINNET (*Fringilla cannabina* or *linota*) is also called the Greater Redpole, Brown, Grey, and Rose Linnet, the Whin Linnet, and, in Scotland, the Lintie or Lintwhite. Its various names seem to be due to the changes of plumage in the males in summer and winter, and to the fact that they do not acquire their red heads and breasts till they are three years old. In confinement the young birds never acquire this colouring, and the old birds soon lose it.

They are very attractive birds, shy by nature, but, when tamed, becoming exceedingly affectionate both to one another and to their owner. Two, which I brought up from the nest (feeding them every two hours with bread soaked in water and squeezed till nearly dry, mixed with scalded rape-seed), were exceedingly tame, and used to come out of their cage and fly about the room, perching upon my head and shoulder to receive their favourite dainty of hemp-seed. They are not active birds, and in an aviary are apt to sit still on the ground and get trodden on, unless they have branches to perch upon. Their natural song is very melodious, and, once learnt from the parents, is never forgotten, so that if it is desired that young Linnets should

learn the songs of the Nightingale, Chaffinch, or Lark, or whistle airs played to them, they must be taken out of the nest as soon as their tail-feathers begin to grow. The males may be distinguished by the white about the neck, wings, and tail. The hen has always the same spotted brown plumage.

The Linnet feeds on all kinds of seeds, especially those of the cruciferous plants. Its fondness for flax or linum-seed has given it its name of Linnet. It is also very fond of hemp-seed, but must not have much of either of these seeds, their oily nature makes the bird too fat. The best food for Linnets is bird-turnip and canary-seed: a little salt mixed with it is sometimes useful, and green food occasionally. They are liable to surfeit from eating too much and taking but little exercise; and bread and milk, lettuce-seed, or two drops of castor oil put into their drinking water, are the specifics for this. They require plenty of water, and are fond of bathing both in sand and water. They sometimes suffer from epilepsy, but there is not the same objection to a bell-shaped cage for the Linnet as for the Goldfinch and Chaffinch. They will live from twelve to sixteen years in confinement, and will often form great attachments to one another, even amongst two birds of the same sex. The male Linnet will sometimes pair with the Canary, but the males are not nearly so beautiful as the offspring of the Goldfinch and Canary, though they are generally good songsters, and prized on that account.

The MOUNTAIN LINNET (*Fringilla montium*), called from its peculiar note the "Twite," and by the Scotch the Heather Lintie, is a larger and more slender-looking bird than the common Linnet, but has the same changes of plumage, excepting the red head, and much resembles it in its character and habits, so that it is often supposed to be the same bird. It lives principally in the northern counties, and is plentiful in Norway and Sweden, and only visits the southern counties of England occasionally.

The Mealy Linnet (*Fringilla borealis*), sometimes called the Mealy Redpole, is another variety. So is the Lesser Redpole (*Fringilla linaria*), which resembles the Linnet in the colour of its plumage, but is more like the Siskin in its size and shape, and in its characteristics. It is a very pretty bird, easily tamed, and exceedingly sociable and affectionate, and a very amusing cage bird, agreeing well with Linnets, Goldfinches, Canaries, and Siskins, and may be taught to perform many clever feats, but its song is merely a low twitter. It may be fed on the same food as the Linnet, with the addition of elderberries, of which it is very fond.

The HOUSE SPARROW (*Passer domesticus*).—This bird seems equally at home in crowded cities and in the open country, and is remarkable for its constant attachment to man and his habitations. It follows him throughout Europe, Northern Africa, India, and even to the passes of the Himalaya Mountains. The Sparrows spoken of by travellers in Palestine, and described as frequenting the Valley of Cashmere in flocks, appear to be of the same species as our Sparrow. It is a pretty bird when free from the smoke with which it is often begrimed, but it is not attractive as a cage bird: it has no pretensions to a song, though Mr. Kidd has declared that if taken from the nest and properly taught, it will sing as well as a Canary; and is so pert and restless, and so given to thieving propensities, that it does not engage our affection. Both the male and female Sparrow are said, however, to be very careful and affectionate parents, and they will become attached to any one who bestows kindness and pains upon them. One who was tamed by a sick man at Paris followed his master everywhere, till he became too ill to leave his bed, and then he refused to leave him. He had a little bell round his throat, and was very unhappy when deprived of it, till another was put on.

The Sparrow has a most accommodating appetite, and

will eat all kinds of food—meat, vegetables, seeds, caterpillars, insects, and any kind of garbage.

Few people would care to keep a Sparrow in a cage, but it is often an inmate of an aviary or bird-room, where it must be a great torment from its pilfering propensities. It should have a mixture of seed and insect food, or the Nightingale's paste would do for it. But it is a pleasanter bird to have as a familiar visitor, frequenting the basket of fat and bread crumbs provided for our outdoor friends, than to keep in captivity. The Sparrow is subject to variations of plumage. A white Sparrow is not uncommon.

The TREE SPARROW (*Fringilla montana* or *Passer montanus*), sometimes called the Mountain Sparrow, is a handsomer bird than its relative, and has more of a song. It is very different in its habits from the House Sparrow, for it very seldom visits houses, and builds in woods and trees by the side of streams; though it occasionally associates with the common Sparrow, and will sometimes take possession of the deserted nests of the Magpie, Crow, and Woodpecker. It is a native of North Asia and America, and inhabits most European countries. In the house it may be treated as the House Sparrow, and may be tamed, but it does not live long in confinement.

The YELLOW AMMER or BUNTING (*Emberiza citrinella*).—This is a very handsome bird, but has no attractions as a cage bird, and is rarely kept except in an aviary or bird-room, where he is shy and awkward, although very lively and active in his natural condition. The females and young males have not much of the beautiful golden yellow colouring of the male. It has various provincial names—Yellow Yeldrich, Yellow Yowley, Yellow Yite, and Skite, and it is also called sometimes the "Scribble Clerk" from the peculiar tracings on its eggs, which are supposed to resemble handwriting. These marks and veinings on the eggs are a characteristic of the Bunting tribe: the common Bunting is called the

"Writing Clerk" in some counties. The Yellow Ammer is a common bird throughout Europe and Northern Asia: it builds on the ground or low down in a hedge, and among rank grass, and the hen is said to be such an affectionate mother as almost to allow herself to be touched before she will leave her nest.

The Yellow Ammer feeds on insects, small seeds, and oats, and in captivity will not thrive without a change of food, such as oats, bread crumbs, crushed hemp-seed, bird-turnip, meat, or insects; it will eat a paste made of grated carrot, bread, and barley-meal; but, being insectivorous as well as seed-eating, it must have a mixture of animal and vegetable food. It is fond of bathing, and likes to have some black earth in its cage, of which it swallows a good deal.

Its congeners, the Common or Corn Bunting, the Ortolan, the Cirl and Reed Buntings, are occasionally kept in aviaries, and would require much the same food: they are all fond of the paste above mentioned, and of oats and millet; indeed, the Ortolans are often fattened as a delicacy for the table, upon these. None of them are desirable cage birds.

THE GREENFINCH (*Fringilla chloris*) is often called the Green Grosbeak or Green Linnet, but it is a large bird with a big beak, and bears a much greater resemblance to the Grosbeaks than to the Linnets. It is a handsome bird, but its natural song is harsh; if reared within hearing of a good songster of another kind, however, it will frequently acquire its song. It is remarkably docile, and is chiefly attractive as a cage bird on that account, it becomes so exceedingly tame. It is a great eater, and apt to take exclusive possession of the seed-box in an aviary, and to drive all the other birds away from it with its great beak. I had four young Greenfinches, reared from the nest on moistened bread and scalded rape-seed, and they used to come out of their cage and fly upon my hand for their food, and were



GOLDFINCH.

p. 92



CHAFFINCH.

p. 96



BULLFINCH.

p. 103

very pleasant pets. As soon as they were full grown, I opened their cage door, and they flew into the garden ; but they returned to their cage for food, and came back every night throughout the summer to roost in it. In their wild state they feed on all kinds of seeds, but their nestlings are generally supplied with caterpillars and other insects. In a cage they should be fed on canary and bird-turnip, with a little hemp-seed occasionally, and have lettuce, chickweed, and cabbage, and juniper-berries from time to time.

The HAWFINCH (*Coccothraustes vulgaris*) is a much larger bird than the Greenfinch, and is much less commonly seen, as it is a peculiarly shy and wild bird, and lives chiefly in the recesses of forests, feeding on haws and various other berries and the kernels of stone-fruit, cracking the shell with ease with its powerful beak. Epping Forest appears to be one of its chief haunts in England. It is not often kept in confinement in this country, but on the Continent is esteemed as a cage bird, on account of its great tameness when once reconciled to captivity. It should be fed on rape and hemp-seed, beech-masts, haws, juniper, ash, and maple-berries, cherries, and peas. It is not a safe inmate of an aviary, as it has been known to kill a weaker companion.

The BULLFINCH (*Pyrrhula vulgaris*), is called also the Coal Hood, Alp, and Nope. The Bullfinch is a very engaging bird, because it is very happy in captivity, and entirely devoted to the person on whom it bestows its affection. It is somewhat capricious, perhaps, in its likes and dislikes, and is addicted to jealousies if the favour of its master or mistress is claimed by any one but itself. A friend of mine had a pet Bullfinch, who was extremely attached to her, but took so violent a dislike to her husband that he would ruffle up his feathers, scold, and scream whenever he came into the room ; and if he offered him any dainty, would try to peck and bite his fingers. This bird pined so much during a long illness of hers that she

gave him to a friend, to whom he eventually transferred his affection. Instances have been known, however, of Bullfinches dying when separated from the person on whom they had bestowed their faithful attachment. They are easily trained to perform amusing feats, to pump up water for their bath, or to draw it up from a well, etc. The natural song of the Bullfinch is harsh and poor; but, when trained, he is capable of whistling or "piping" airs to perfection. He must be taken from the nest before he has had time to learn his father's song, and can be easily reared on moistened bread and scalded rape-seed; and, as soon as he begins to twitter, he must have constant lessons, on a clarionet or bird-organ, of the airs he is to pipe. These should always be given early in the morning and when the bird is hungry; the air he is to learn, or a portion of it, should be played or whistled over and over to him in the dark, and when he tries to imitate it he must be rewarded with his breakfast and a few hemp-seeds, or other especially favourite food. He should hear no other sound while his lesson is being repeated to him, and it is necessary that it should be repeated exactly in the same time, and without any variation in the tune. If a false note be played, or an imperfect instrument be used, the bird is almost sure to copy the imperfections, in his performances. When once thoroughly learnt, he will be very much displeased if any mistake be made in the repetition of the air, and will stop short, and hiss, and begin it afresh. In Germany there are regular schools for Bullfinches, where the birds are taught in classes for some months, and then each is given into the charge of a boy, whose business it is to be continually repeating the airs the bird has learnt, to him. Some Bullfinches are able only to learn one tune thoroughly; others will acquire two or three quite accurately, but they will generally require to have their memory refreshed by their repetition, when they have been silent awhile during the time of moulting. They are sometimes, like spoilt chil-

dren, capricious about exhibiting their accomplishments, and require a good deal of coaxing before they will pipe. A friend once brought her Bullfinch to display his talents to me; but no persuasions of hers would induce him to pipe till she sent for her servant, who went up to the cage, put his head from side to side, and said, "Come, Bully, whistle," and the bird immediately began bowing and prancing about, and went through his performances without more ado. Good piping Bullfinches are very costly birds; three or four guineas, or even more, are often paid for one.

A Bullfinch seems thrown away in a bird-room or aviary: he looks dull and inactive among the more sprightly birds; moreover he is apt to be quarrelsome and to fight with birds of another kind, and his big beak is capable of inflicting serious injuries. He is a very affectionate mate, and both parents are very fond of their nestlings, who remain with them much longer than is the case with the generality of young birds. In their wild state they are accused of committing sad havoc amongst the fruit trees, by picking off the early buds; and although some people assert that they only do this in search of the maggots in the buds, I am afraid this cannot be maintained, and that it must be allowed that they are guilty of great depredations. They eat also the seeds in the fir-cones, beech-masts, flax-seed, and nettle-seed, and no doubt are partially insectivorous. In confinement they should be fed chiefly on canary and bird-turnip: hemp-seed must be given very sparingly, as a luxury and a reward only: it has a most injurious effect upon them, causing blindness, loss of feathers, blackness of plumage, etc. Two young Bullfinches which I once reared from the nest were given away as soon as they were full grown, and were brought back to me in the course of a few weeks, the most deplorable little objects possible to conceive: they had a few feathers on their heads, and two long tail-feathers, and their little

red bodies were perfectly bare of plumage. They had been fed entirely upon hemp-seed. A course of warm baths and plenty of green food restored them to health and beauty. They require lettuce, chickweed, and groundsel, and are fond of watercresses, and must have no sweets or injurious delicacies. When moulting, they may have a clove or a rusty nail in the drinking water, egg and bread crumbs, or a few ants' eggs; when over-fat, scalded rape-seed and green food: a little fruit or berries may be given occasionally. They are very fond of bathing.

The CROSSBILL (*Loxia curvirostris*).— This bird is an inhabitant of Europe, Northern Asia, and America, and occasionally visits the fir plantations of Great Britain. It is chiefly remarkable for the curious shape of its bill, from which it takes its name; it is almost an inch long, and the upper mandible bends downwards, and the lower one upwards, so as to cross each other, a formation which enables the bird to extract the seeds from the fir-cones and the kernels from the almonds in the shell, in which it makes a hole with its powerful beak, while it can pick up and shell hemp and canary-seed with perfect ease. It is very fond of apple-pips, and cleverly cuts a hole into the core of the apple to extract them, of course making great havoc in an orchard. In confinement it may be allowed to range the room, but it is apt to get sore eyes and ulcerated feet, and is subject to epilepsy; and although a very handsome bird and readily tamed, it is not very attractive, and is chiefly amusing from its cleverness in extracting seeds from the fir-cones given to it, which it holds like a parrot in its claws. It climbs up and down its cage after the manner of a parrot, too, and should have a bell-shaped wire one, as it would soon destroy a wooden cage. It should be fed on canary, rape, hemp, and fir-seeds, and may have juniper-berries and an apple occasionally. The song is harsh and unmelodious. Crossbills differ very much in their colouring; they are greenish-brown at first, but after the first

moulting the males become red, and keep this colour for a year, when they acquire the greenish-yellow plumage of the old males. As they moult at different times, birds of very varied colours are found together. In confinement the young males never acquire the red colour. The females are grey or speckled with green.

The PARROT CROSSBILL (*Loxia pittyopsittacus*) now and then visits England: it must be treated in every respect like the common Crossbill. Bechstein says it is a very sociable bird and easily tamed, but should not be allowed to range the room, as it is apt to destroy books, shoes, etc., by gnawing them.

The PINE GROSBEEK (*Loxia* or *Corythus enucleator*) resembles the Crossbills in its habits, but the mandibles are not crossed, but only hooked. It is very rarely seen in England, but is more common in North Germany, and Bechstein describes it as a favourite cage bird on account of its tameness and agreeable song. The same treatment is required as for the Crossbills.

The VIRGINIAN NIGHTINGALE (*Cardinalis Virginalis*) is also called the Cardinal Grosbeak, Red Bird, Red Cardinal, etc.

This would appear to be the most beautiful specimen of the group of Cardinals, chiefly, if not wholly, confined to America. It is about eight inches long, of which the tail measures two. The back is dark red, the whole of the rest of the body is of a bright scarlet, excepting some short feathers round the beak and throat, which are black; the bill and feet are red too; the quill-feathers and tail are paler and browner. The crest upon the head is pointed, and can be raised and lowered at pleasure. The female is smaller and less handsome, with a browner back, grey chin and forehead, and pale brown with a shade of red in the lower part of the body. Both birds sing, the female almost as well as the male, whose voice is very fine and loud. He sings all the year round except while moulting,

and some of the notes have a little resemblance to those of the English Nightingale; but the song is more monotonous, louder, and less sweet. This bird is said to be very tender-hearted, and kind in feeding young birds even of a different species, when placed in the same cage with it. One belonging to an old woman at Washington earned for his mistress a large sum of money, by rearing a number of young birds of other species placed under his charge. Yet these birds are better kept apart when full grown, perhaps because the singing powers of the female interfere with those of the male. They are very sensitive, restless birds too, never still, and fretted by the bustle of an aviary, therefore they should be kept alone in a good sized cage, and be allowed an occasional flight round the room. I have read that the bright scarlet of the plumage becomes in time deteriorated in confinement; but probably this is from being kept either in too close an atmosphere or fed on improper food. They are hardy birds, and if kept out of draughts, and properly fed, will preserve their health and beauty many years. Some have been kept twenty years in a cage. They live in woods and sheltered hollows in North America, where holly, laurel, and other evergreens grow, and feed mainly on Indian corn and buckwheat: they are fond of apples, cherries, and other fruit; but they appear to require a mixture of insect or animal food, with millet, canary, and hemp-seed, of which latter they must have only a few seeds in the day. A lady who has had a pet Virginian Nightingale for some years, says he is still in the highest health and beauty: she feeds him upon canary-seed, giving him a few hemp-seeds, four or five mealworms, or spiders, grubs, or caterpillars every day. He is fond of Spanish nuts, almonds, walnuts, and Indian corn, but cannot crack the nuts. A piece of bay salt and a lump of chalk are always kept in his cage, and she gives him opportunity for a daily bath. He is, she says, a most charming companion, so quick-witted and clever, and so

Finches.

III

devoted to his mistress. If she puts her hand into his cage to stroke him in the dark, he will make the most endearing little noise all the time to express his delight ; if she moves away he gives vent to his annoyance by a clicking note, which he discontinues as soon as she returns to him. Then, when he is catching flies about the room, which he delights in doing, he will carry his booty to her, and insist upon her taking a share of it, and if he can get a lump of sugar from the sideboard he will fly across the room to her, and put it gently into her mouth while hovering on the wing ; and when she has been absent for an hour or two, he will meet her with fluttering outstretched wings, sometimes singing with joy. He has about six different songs ; one contains a "jug-jug," like the English Nightingale, the others consist of three or four notes repeated over and over again. Some notes are very sweet and liquid. She says he has the finest intellect of any bird she has ever known : if he is thirsty he will make believe to drink out of a spoon, looking very hard at her all the while, and if he sees a hawk or a cat at a distance he utters a note of alarm, descrying the former when it is a mere speck in the sky. The sensitive nerves and natural activity of the Virginian Nightingale make him suffer exceedingly if confined in a small cage, surrounded by a number of other birds, consequently he is often described as wild and vicious-looking ; but kindness and gentleness will soon win his loving little heart, and he will amply repay his mistress for all the attention bestowed upon him.

The RED-CRESTED CARDINAL (*Paroaria cristata*) is a handsome bird, a little larger than the Virginian Nightingale, and comes from South America. The back is dark grey, the quill-feathers of the wings are of a darker shade of the same colour, and the tail is nearly black ; the head, crest, cheeks, and throat are bright red of an orange hue, deepest on the chest, where it ends in a point ; the lower part of the body is greyish-white, and the feet and legs are

black; the strong beak is dusky grey; the crest is pointed like that of the Virginian Nightingale, and is raised and depressed at pleasure. A margin of white separates the red of the cheeks and breast from the grey of the body, forming a partial collar; the red joins the grey on the nape of the neck, and a few black feathers mingled with the white give a mottled appearance to the collar. I give the colouring of a young male sent to me from the Zoological Society's Gardens, a very sprightly active bird, singing all day long, or calling "whit, whit." The song was loud, but not very melodious. I was directed to feed him upon canary and hemp-seed, a little green food, lettuce, water-cress and chickweed, with occasional mealworms or insects, and a little scraped raw beef now and then. The latter, however, he rarely touched, so I gave him some cooked beef and mutton, chopped up very finely, and this he enjoyed exceedingly. Every now and then he would eat a piece of hard-boiled egg: he did not care much about this, but considered himself exceedingly ill-used if I did not give him some meat, every other day or so. Sometimes he would wash away all the water in his glass, but would not go into a bath.

The RED-HEADED CARDINAL (*Paroaria larvata*) is called by bird-dealers "the Pope." I believe it is very like the Red-crested Cardinal, but without the crest. These two birds are described by Buffon as the "Paroare" and "Paroare huppé," and he says this name was derived from the native Brazilian name *tije guacu paroara*. He also calls the Red-headed Cardinal the "Dominican Cardinal." The bird called by Bechstein the *Cardinal Dominican* of Buffon (the Dominican Grosbeak) does not answer to Buffon's description of this bird, as it has no red head: the bird which he calls the Paradise Grosbeak seems from his description more like "the Pope." He may be treated in every respect like the Cardinal with a red crest, and so may the Black-Crested or Green Cardinal

(*Gubernatrix cristatella*), a very handsome green and yellow bird with a black crest, which comes also from South America.

THE NONPAREIL FINCH (*Cyanospiza* or *Emberiza ciris*) called by American authors the "Painted Finch" or "Painted Bunting," is also spoken of by Buffon as "the Pope," he says on account of his beautiful violet hood. He is a most splendid bird when in full plumage; but as he moults twice a year, and the young males do not acquire their full plumage till they are three years old, he is seldom met with in the perfection of his colouring. I have a beautiful specimen of the bird, which at the present moment has a violet head and neck, a red circle round the eyes, the iris brown, the beak and feet brown, the upper part of the back yellowish-green, the lower part of the back, and the throat, chest, and whole under part of the body, as well as the upper tail-coverts, of a bright red; the wing-coverts are green, the quills reddish-brown tinged with green, the tail is reddish-brown. He is about the size of the Robin, and very much resembles that bird in his attitudes and characteristics, and his song is a sweet low warble, much of the same character as that of our winter songster. He is fed upon canary and millet-seed, and is exceedingly fond of flies and spiders, which he ought to have, to keep him in health. If I offer him one, he darts across the cage to seize it, and takes it from my hand fearlessly; and when he is allowed to fly about the room, he will catch flies for himself, either pouncing upon them in the window, or taking them on the wing, in the course of a rapid dash across the room. He is a sociable bird, and very inquisitive, hopping about on the table, and examining everything he sees; and when he is tired of his sudden flights about the room, he will go to a vase of flowers placed before a mirror, and warble away to his image reflected in the glass. A bird of the same species which I had for some years was equally tame,

but although a very pretty bird, never acquired the perfect plumage, but retained the colouring of a young male of two years old. He had a blue head, red breast, and green back. He was subject to epileptic fits, and when seized by one was always brought round, by being plunged head-downwards into cold water. Two or three sudden dips were sufficient to revive him; he sat up, plumed himself, and was all right again. He died of old age at last. The female is not nearly so pretty as the male: she is a yellowish-green bird, with brown and green wings and tail.

The Nonpareil is a native of North America, from Canada to Mexico and Brazil, but only to be found in the colder parts in summer: its nests are found mostly in the orange and citron trees. Buffon says that the Dutch breed these birds in their aviaries.

The INDIGO BIRD (*Cyanospiza* or *Fringilla cyanea*) is another lovely bird, a native of North America. He is one of the many birds called by the French bird-catchers *L'évêque*, from his beautiful violet blue plumage. The top of the head is pure violet, shaded to deep indigo blue on the back, with a greener tinge on the lower part of the body. The quill-feathers are brown edged with blue, the tail brown, and the beak and legs lead-coloured. The female is brown: Mr. Gosse calls her "drab-coloured;" and the male bears the same colour while moulting, and sometimes moults twice in the year. He is about the size of a Linnet, and his song somewhat resembles the song of that bird. One, which was in my possession for a short time, used to sing by candlelight: he was fed on canary and white millet-seed: crushed hemp-seed is said to be good for these birds occasionally, and they are fond of flies and spiders. They are described by Mr. Gosse as flitting about in an unfrequented part of the forests in Alabama, the male and female both uttering the call "*chip*," "described by Wilson as resembling the sound made by two pebbles struck together." When the male was alone one

Finches.

115

day he heard his simple song, which he describes thus: “*weasy-weasy-weasy-che-che-che-che*,” and watched him darting down to pick up an insect, and, alighting on the perpendicular stalk of a weed, clinging to it with one foot above another, which he thought a favourite position of the bird’s. My Nonpareil has the same habit, and will cling to the cord of the window-blind in the same manner.

The AMERICAN GOLDFINCH (*Chrysomitris* or *Fringilla tristis*).—The American Goldfinch is so named from its resemblance to our Goldfinch in habits and natural food, subsisting much on thistle-seed, and flitting about in flocks from weed to weed, twittering all the time, and opening and closing its wings in the same manner. It is a yellow bird, shaded and streaked with dark brown; the head is black, and the wings and tail are of the same colour, but the feathers are almost all edged with white. This is the male’s summer plumage; its colours in winter are of russet and olive green. The female has much the same hues, but darker, so that they are somewhat like Siskins, and about the same size. They build a beautiful nest, most delicately woven, and fastened with fibres to the forked branches in which it is placed, the materials being thistle-down, spiders’ webs, feathers, hair, and soft fibres. The male’s song is a twitter much like that of the English Goldfinch. They may be fed on the same food in confinement, and will become very tame.

The SAFFRON FINCH (*Sycalis Braziliensis*) is a beautiful bird, very like the Canary in size and shape: the forehead is of a bright orange or saffron colour, and the rest of the body a paler tint of the same colour, shaded with olive green on the back; the quill-feathers and tail being black, broadly edged with yellow. The hen is of a paler colour in the forehead, and has a greener tinge throughout the body. They come from Brazil, and may be fed and treated like Canaries, but require more warmth.

There are various other foreign Finches, sometimes kept

in England in cages—the “Cuba Finch,” “Negro Finch,” etc., all of which would, I imagine, require similar food. Canary and millet-seed would answer for all these. There are two species of African Singing Finches: the common sort much resembles the Siskin, but has rather a brighter yellow plumage; and a rarer species is greyish-brown, darkest on the wings and tail, with the throat and under part of the body white, and pale flesh-coloured beak and legs. It is a charming little bird, smaller than a Linnet, but somewhat like that bird in shape, and having a very sweet song, wonderfully powerful for such a tiny creature. It lives chiefly on brown and white millet, and eats canary-seed occasionally. There are also some very pretty Finches occasionally brought from Australia, called by bird-dealers the “Queensland” or “Rockhampton Finches.” Two species which I have seen have very beautiful soft plumage. The CHESTNUT-BREASTED FINCH (*Donacola castaneothorax*) has a chestnut brown back and wings, the throat and cheeks are brownish-black, and the breast has a broad band of buff, edged with a very narrow stripe of black. The head is beautifully mottled with black, brown, and buff; the bill is pale grey, the legs and feet lead-coloured; the stomach is of a pure white, spotted on the sides with brown; the upper tail-coverts are buff, the lower black, the tail itself is dark brown. The male and female are alike in plumage. The BANDED FINCH (*Poëphila cincta*) has a beautiful soft grey head, and a velvet-like black gorget, widening on the chest; a black line runs from the eye to the bill, which is almost black. The whole of the upper part of the body is of a rich chestnut brown, shading into a darker and greyer brown on the wings; the lower part of the body from the gorget to the red legs is of the same chestnut hue; a black band passes from the thighs across the back, which is hidden when the wings are closed; the upper and under tail-coverts are white, the tail is black. The cock and hen are alike. The former

has a very odd pretence at a song: three long-drawn notes, and two short ones.

The BRISBANE or CHESTNUT-EARED FINCH (*Amadina castanotis*) is a lovely bird about the size of the largest of the Waxbills, the St. Helena Waxbill. It has a large beak, like that of a small Grosbeak, of bright vermilion; the top of the head and back are grey, shading into brown on the wings; the tail is blackish-brown, with the upper feathers barred with black and white, giving the appearance of large white spots. The male has a bright chestnut patch on each ear, and a black streak coming straight down from the eye, a white patch between this and the beak; the throat and sides of the chest are beautifully barred with dark grey and white, with a broad black band across the chest; the lower part of the body is white, and the sides under the wings chestnut brown with white spots; feet and legs orange.

The hen is rather paler in colour on the back, and has neither the chestnut on the ears, the barred throat and black band of the cock, or the brown under the wings; but she has the same black streak coming down from the eye, and a dusky white patch between that and the beak. They have a low harsh call-note, and the male has a croaking kind of warble by way of a song. They eat canary and millet-seed. Captain Sturt speaks of these birds as more numerous than any others in the interior of Australia; collecting together in hundreds on bushes never very far from water, to which they regularly resort at sunset; and he says that he and his companions considered them as harbingers of good, as, whenever they saw them, they knew that water was at hand. They build in small trees, many nests being together in the same tree, and hatch their young in December.

The DIAMOND SPARROW (*Amadina Lathamii* or *guttata*) or Spotted-sided Finch, which also comes from Australia, has much the same shape as the Brisbane Finch, stout and

short, with a very short tail, but it is considerably larger than the latter. The beak is deep crimson in colour, and so is the iris and the ring round it: there is a black streak from the bill to the eye; the head and back are greyish-brown, deepening on the back and assuming a more olive shade on the wings. The throat is white; the chest has a broad black band across it; the under part of the body is white, and the sides under the wings are quite black, with oval white spots, from which it has taken its name of "Diamond Sparrow." The lower part of the back and the upper tail-coverts are of a deep carmine; the tail is black and very short; the legs and feet are grey. I had one of these birds in my possession for some little time, who inhabited the same cage as the Indigo Bird, and lived on the same food, eagerly seizing a fly whenever one was offered to him, and taking it readily from the hand. He had no song, but a squeaking call-note of "aye-aye."

This bird must not be confounded with the Diamond Bird of Australia (*Pardalotus punctatus*), which is a smaller and more slender bird, allied to the American Manikins, and bears its diamond spots on the crown of the head and wings.

The CORAL-NECKED or CUTTHROAT SPARROW (*Amdina fasciata*) is an African bird, although it is sometimes called by bird-dealers the "Indian Sparrow." Bechstein describes it under the name of the "Banded Grosbeak," and Swainson calls it the "Red-collared Bengaly," and in the Zoological Society's list it bears the name of the "Fasciated Finch." It is about the size of an English Sparrow; the ground colour of the plumage above and beneath is of a delicate greyish fawn colour, spangled all over with short angular black marks, one or two of which are at the point of each feather. The throat is white, crossed by a bright red bar, which also covers the ears. The middle of the breast is marked by some large white spots, below which the body has a patch of cinnamon

colour; the wings and tail are blackish-brown, some of the feathers being tipped with white. The hen has no red collar, but her feathers are beautifully smooth and spangled like those of the cock. The beak and feet are grey. They make a harsh kind of twittering, and their song is somewhat croaking. They may be fed on canary and millet-seed, and should have chickweed and plain cracknel biscuits occasionally.

The CAMBASSO, CUMPASSO, or the LITTLE DOCTOR (*Amadina nitens*) is, I believe, the same bird as that described by Swainson as the "Glossy Black Bengaly," and by Bechstein as the "Glossy Finch." He calls it "*Le Moineau de Brazil*," following Buffon; but Swainson says that the idea that the bird came from America probably originated from the practice of the Portuguese colonists of importing these little birds from Africa, and selling them in the South American ports. I cannot make out the origin of the name "Cambasso," unless it is derived from Vieillot's name of "*Le Moineau Camba-jou*." Buffon confounds it, with several other blue-black birds, under the title of "*Le Père Noir*," which properly belongs, I believe, to the Jaccarini Finch of South America. The whole plumage of the male is of a glossy blue-black, with a few white spots on the flanks; the bill and legs are pale flesh-coloured. When he is moulting, however, the plumage becomes speckled with brown. The hen is entirely brown, mottled and barred with yellowish-brown; and I suppose the black dress and the constant discoursing of the male, who keeps up a continual chattering, with a few sweet notes drawn out occasionally, and the very different dress of the hen has caused the bird-dealers to name them familiarly "The little Doctor and his wife." The young cocks have the colour of the hen bird at first, and then become mottled with the glossy blue-black of the adult bird, for some time before they acquire the full plumage. They have all an extraordinary habit of hovering in the

and some of the notes have a little resemblance to those of the English Nightingale; but the song is more monotonous, louder, and less sweet. This bird is said to be very tender-hearted, and kind in feeding young birds even of a different species, when placed in the same cage with it. One belonging to an old woman at Washington earned for his mistress a large sum of money, by rearing a number of young birds of other species placed under his charge. Yet these birds are better kept apart when full grown, perhaps because the singing powers of the female interfere with those of the male. They are very sensitive, restless birds too, never still, and fretted by the bustle of an aviary, therefore they should be kept alone in a good sized cage, and be allowed an occasional flight round the room. I have read that the bright scarlet of the plumage becomes in time deteriorated in confinement; but probably this is from being kept either in too close an atmosphere or fed on improper food. They are hardy birds, and if kept out of draughts, and properly fed, will preserve their health and beauty many years. Some have been kept twenty years in a cage. They live in woods and sheltered hollows in North America, where holly, laurel, and other evergreens grow, and feed mainly on Indian corn and buckwheat: they are fond of apples, cherries, and other fruit; but they appear to require a mixture of insect or animal food, with millet, canary, and hemp-seed, of which latter they must have only a few seeds in the day. A lady who has had a pet Virginian Nightingale for some years, says he is still in the highest health and beauty: she feeds him upon canary-seed, giving him a few hemp-seeds, four or five mealworms, or spiders, grubs, or caterpillars every day. He is fond of Spanish nuts, almonds, walnuts, and Indian corn, but cannot crack the nuts. A piece of bay salt and a lump of chalk are always kept in his cage, and she gives him opportunity for a daily bath. He is, she says, a most charming companion, so quick-witted and clever, and so

Finches.

III

devoted to his mistress. If she puts her hand into his cage to stroke him in the dark, he will make the most endearing little noise all the time to express his delight ; if she moves away he gives vent to his annoyance by a clicking note, which he discontinues as soon as she returns to him. Then, when he is catching flies about the room, which he delights in doing, he will carry his booty to her, and insist upon her taking a share of it, and if he can get a lump of sugar from the sideboard he will fly across the room to her, and put it gently into her mouth while hovering on the wing ; and when she has been absent for an hour or two, he will meet her with fluttering outstretched wings, sometimes singing with joy. He has about six different songs ; one contains a "jug-jug," like the English Nightingale, the others consist of three or four notes repeated over and over again. Some notes are very sweet and liquid. She says he has the finest intellect of any bird she has ever known : if he is thirsty he will make believe to drink out of a spoon, looking very hard at her all the while, and if he sees a hawk or a cat at a distance he utters a note of alarm, descrying the former when it is a mere speck in the sky. The sensitive nerves and natural activity of the Virginian Nightingale make him suffer exceedingly if confined in a small cage, surrounded by a number of other birds, consequently he is often described as wild and vicious-looking ; but kindness and gentleness will soon win his loving little heart, and he will amply repay his mistress for all the attention bestowed upon him.

The RED-CRESTED CARDINAL (*Paroaria cristata*) is a handsome bird, a little larger than the Virginian Nightingale, and comes from South America. The back is dark grey, the quill-feathers of the wings are of a darker shade of the same colour, and the tail is nearly black ; the head, crest, cheeks, and throat are bright red of an orange hue, deepest on the chest, where it ends in a point ; the lower part of the body is greyish-white, and the feet and legs are

middle of the cage, with their feet drawn up and fluttering their wings, chattering all the time. They are fed on canary-seed and millet. Bechstein says they have an agreeable voice, but I cannot echo his opinion with regard to the two birds I have had. They are very fond of bathing.

The JAVA SPARROW or PADDY BIRD (*Padda oryzivora*).—This bird is about the size and shape of a Bullfinch, with a thick rose-coloured beak, and feet of the same colour, but paler; the head and throat are black, the cheeks white, and the rest of the body is of a soft grey colour, the plumage being so neat and smooth that the feathers all seem to fit into each other, and all appear covered with bloom like that upon plums. They are very affectionate birds, and happy in confinement, and hardy enough to live in an aviary with Canaries. With smaller birds they are sometimes pugnacious, but the pairs are much attached to each other and are continually dressing each other's feathers. They are generally fed upon canary and millet-seed, but in a wild state live chiefly on rice, and commit great ravages in the rice-fields, whence they are called "*Oiseaux de riz*." They have a very short monotonous song, and are not very engaging birds. The female is rather lighter in plumage than the male, but that is the only distinction between them. At the Crystal Palace show in February last, a pair of Java Sparrows were exhibited by Mr. Hawkins, entirely white, with the black head and throat and rose-coloured beak of the grey Java Sparrow, and with the plumage equally soft and downy, and I was told that they were most beautiful birds. On inquiring about them a short time ago, I heard with great regret that they were both dead. The hen had laid four eggs. They came, I believe, from Japan, and were the first brought to England. I have heard of one since, in the possession of a lady at Brighton.

The SPICE BIRD (*Munia undulata*).—This is also

Finches.

121

known as the "Nutmeg" and "Cinnamon Bird," and is described by Bechstein under the name of the "Gowry or Cowry Grosbeak." It is about the size of a Linnet: the beak is black, the legs and feet are lead-coloured; the head, neck, throat, and the upper part of the body generally are of a rich cinnamon brown, the feathers round the beak and on the cheeks being of a darker hue. The breast and sides of the body are white, but all the feathers are bordered with heart-shaped black markings, so that they appear speckled; the lower part of the body is white, the upper tail-coverts are speckled like the sides, the rest of the tail is brown, as are the wings. The hen is very like the cock in plumage. The latter has a very droll little twittering song, scarcely audible excepting at the conclusion, which is like a feeble kitten's cry. Evidently the hen thinks it very beautiful, for she generally puts her head close to her mate's while he is singing, and looks admiringly into his face, as if unwilling to lose a note. They eat canary-seed and millet. I have heard that they sometimes breed in England. They come from Java and the Spice Islands.

The AFRICAN SILVER-BILL (*Munia cantata*) or Quaker Bird, resembles the Spice Bird in shape and size. The beak is of a pale bluish-grey, with a silvery shade over it, and the iris and the ring round it are grey also. The prevailing colour of the plumage is fawn-coloured, shaded and barred on the upper part of the body with brown: the feathers of the head and throat look mottled, and the bird often ruffles these, but the rest of the plumage is delicately soft and smooth; the quill-feathers of the wings and tail are brownish-black; the fawn shades almost to white on the under part of the body. The male and female are almost exactly alike. The former has a very pretty little warbling song, very low and gentle, like running water, and he often dances up and down on his perch, while singing, in time to his song. They are very affectionate birds, and continually caressing each other, and always

sitting in pairs. They are also said to breed occasionally in England, but I should think it very doubtful whether the young of the Silver-bill or the Spice Bird could be reared in this country. There is an Indian Silver-bill (*Munia Malabarica*), differing slightly from the African species, but I have never seen it.

The BLACK-HEADED FINCH or MALACCA GROSBEAK (*Munia Malacca*) is a chestnut brown bird, with a black head and neck, and is mentioned by Bechstein as thriving well in confinement on hemp and canary-seed.

WAXBILLS and AVADAVATS, etc.—These pretty little birds are delightful pets for the drawing-room. They are thoroughly happy in each other's society, and sit all together in a row on a long perch, packed as closely as possible, caressing and pluming each other. One of the Avadavats will often lift himself up and sing, a pretty little soft warble very soon coming to an end, and then he sinks down into his place, and another gets up and sings. The Waxbills do not often sing anything like a song, but they chirp a good deal; and, if one of them gets hold of a feather, or a little bit of thread or grass-stalk, the chirp becomes very continuous and triumphant, and the bird dances up and down on the perch with great delight. The largest I have seen of the Waxbills comes from St. Helena. It is about four inches and a half in length, including the tail, which is long and wedge-shaped. The beak is bright red, like sealing-wax, and a darker red stripe passes through each eye, and there is a dash of red also in the under part of the body; but the prevailing colour of the plumage is greyish-brown, the head and back being much darker than the neck, throat, and chest; the wings and tail are dark brown, and the under part of the tail is still darker. The remarkable thing about the plumage is that all the feathers have transverse blackish wavy lines all over them, and look very soft and silky; the legs and feet are brown. The male and female are alike. The common African

Waxbill (*Estrelida cinerea*) is a much smaller bird, with a shorter tail; about three and a half inches in length, of rather a greyer shade of plumage, but with the same roseate hue on the under part of the body, the same red stripe through the eyes, and vermilion beak; but it has not the transverse marking of the feathers. The hen is the same in colour. The Orange-cheeked Waxbill (*Estrelida mel-poda*) has a body of the same size as the last bird described, with rather a larger and broader tail, which he flirts incessantly from side to side. He is a most beautiful, smooth little bird, always as neat as possible, with every feather in its place, with the same bright vermilion beak, grey head, neck, and throat, brown back, wings, and tail, two bright orange patches on the cheeks instead of the red stripe through the eyes, a light grey breast and sides, and a dash of salmon colour on the lower part of the body; the upper tail-coverts are dark crimson. The hen is exactly the same. The Zebra or Orange-breasted Waxbill (*Estrelida sanguinolenta*) is the smallest of the species, only a little more than three inches long: the head and upper part of the body are brown; the throat, breast, and sides of the same colour; the beak is of a deeper red than the other Waxbills, and the under mandible is black at the top; a deep orange stripe passes through and above the eye; the under part of the body from the chin to the tail-coverts is straw-coloured, and there are transverse bars of the same colour across the brown feathers of the sides, breast, and body. This colour deepens into orange in the middle of the breast, and is continued nearly to the tail; the upper tail-coverts are also of a deep orange shade. The hen differs from the cock in being paler throughout the lower part of the body, which is straw-coloured, only orange under the tail, and with upper tail-coverts slightly tipped with the same colour; she has no zebra markings on the sides.

These four Waxbills are the commonest species imported

into England, but there are many varieties found in Africa and in other tropical regions. I think the prettiest I have ever seen is one now in my possession, called the Grey-blue or Cinereous Waxbill (*Estrela cærulescens*). It is of a delicate slate-coloured hue over the whole body, excepting the lower part of the back, upper and under tail-coverts, and tail, which are rich crimson: the quills are light brown, and the under part of the tail is black. The stripe through the eyes is black, and the beak is nearly so. The slate colour becomes almost white on the chin, throat, and breast, but deepens again on the lower part of the body; there are several silvery white spots on the sides. All these Waxbills come from Africa.

There are also some Australian Waxbills: the common one (*Estrela temporalis*) much resembles the smaller African Waxbill (*Estrela cinerea*), but is larger, and of a darker brown. The RED-TAILED FINCH (*Estrela ruficanda*) is a very pretty bird, with a vermilion beak, and cheeks dotted with tiny white spots. The head, back, and wings are greyish-olive, the breast and sides a paler shade, dotted all over with larger white spots; the lower part of the body is straw-coloured, and the legs yellow. The tail is reddish-brown, and the upper tail-coverts have pink and white spots upon them. The male has a low warble, scarcely audible.

The AVADAVATS (*Estrela amadava*), Amandava, or Amaduvade Finch, which belong to the same family, come, I believe, from India and the Indian islands. They are rather bigger than the smaller species, but less than the St. Helena Waxbill. They vary somewhat in colour, and are some years before they come to their perfect plumage; but the males I have had, have had the head and under part of the body of a fiery red tinged with black; the feathers of the back are brown, but with such a margin of red as to make that the prevailing colour; the quills are dark brown, and the tail is black. All the feathers, both red and black,

of the wings, and most of those of the body, are tipped with white, giving the bird the appearance of being speckled with white spots. The beak is red, but the upper mandible is almost black on the top. The hen is not quite so large as the cock, and has very little red about her plumage; the under part of the body is of a pale sulphur colour mottled with brown. She has a few small white spots on the wings. The tail is more fan-shaped than those of the Waxbills. The FIRE FINCH (*Estrela minuta*) is a native of Africa, but bears a strong resemblance to the Avadavats in some stages of their plumage. It is somewhat smaller, and the male is of a pure red, with no admixture of black on the forehead, throat, and breast; the rest of the plumage is greenish-brown tinged with red; the tail is nearly black, and the upper tail-coverts are red. The beak is like that of the Avadavat, but there is a yellow ring round the eyes. This is also a distinguishing mark of the hen Fire Finch, which is very much like the hen Avadavat, but of a somewhat greyer brown, and her tail-coverts are red. These birds do not sing.

The CORDON BLEU (*Estrela phœnicotis*), called also the "Crimson-eared Waxbill," "Blue-bellied Finch," etc., is also an African bird. It is rather larger than the Avadavat: the head and back are of a delicate greyish-brown or drab colour, rather deeper on the quill-feathers of the wings; the under part of the body is of a sky-blue, and this colour is rather deeper on the tail-coverts and tail. There is a patch of dirty white on the centre of the stomach. The cheeks are blue, and the male bird has a bright crimson patch on the ears. The hen is somewhat paler altogether, the blue on the breast being less bright, and she is without the crimson patches on the ears. The bill is of a more purple shade than that of the Avadavat. The cock has a pretty soft song, and has a curious habit of singing with something in his beak. If he can pick up a bit of cotton in the cage, or a stalk of any kind, he dances up

and down with it in his mouth, singing all the time. I have never heard of these birds rearing their young in confinement; but two of mine paired, and carried up a quantity of ends of wool into a small knitting-basket, arranged so as to form a domed nest with a hole in it, which I put into a corner of the cage, when I saw them carrying bits of stalk about; and the hen sat in it for a day or two, and then died, as I believe, from inability to lay her eggs.

All these pretty little birds live together in a cage with Spice Birds and Silver-bills, in the utmost harmony. They are so sociable and affectionate that they delight in being together. The Avadavats, indeed, are miserable without companions, and if two birds of different species lose their respective mates, they are almost sure to console each other, and to consort together, sitting close together, caressing and pluming each other. They all eat the same seed, chiefly French and Indian millet, and are equally fond of washing. I had several Waxbills and Avadavats once in a cage made of silver wires, with glass sides and ends enclosing the lower half, but I do not think this kind of cage good for them; they are so continually washing and splashing the water all over it, that the glass is always dirty, and moreover the lower part of the cage is never dry, as it does not admit air as in the ordinary cages. Either tin or brass wire *lacquered* would be a better material than glass for the cage. My birds live in a waggon-shaped cage of lacquered brass, eighteen inches long and high, and twelve wide, and I find this a very useful cage, holding eight or ten pair of small birds comfortably. They like a long perch at the top, on which they can all roost, packed closely together, heads beside tails, etc., and a swing in the centre. I only allow them a bath once in the day in the sunshine; on cold dull days I keep them out of the water, but they always sprinkle themselves with water from their drinking-glasses or tins; for I generally hang up in the cage four or five "pegging-pots," small tins with a round hole in the top,

into which the birds cannot possibly squeeze themselves. I believe it is the only form of drinking vessel that they would not contrive to get into. A stalk or two of millet in the ear, a ring of *colifichet*, French bread, which is very nourishing and strengthening, and a couple of cuttlefish-bones, are suspended in the cage, and in cold weather I put in six or eight tiny baskets lined with flannel, in which they take up their abode at night. In winter and when moulting they have a pinch of Cayenne pepper sprinkled on the sand at the bottom of the cage once or twice a week, and when they mope and seem out of sorts I put a drop of chloric æther in their drinking water now and then. I have sometimes given them a little boiled milk when they appeared heated; but there seems very little to be done for these delicate little creatures if they fall ill, excepting to give them warmth. In the summer they like to bask in the sunshine, and are the better for a little fresh air while the sun shines; but they must never be exposed to draughts or a sudden change of temperature, and during the night they must always have a thick warm covering over their cage. In the winter too, and during moulting, they need a great deal of warmth: a conservatory moderately heated and kept pretty much at the same temperature would be the best abode for them. In an ordinary drawing-room the covering should never be taken off the cage, on a cold morning, till the room is thoroughly warmed.

The AFRICAN MANIKINS, which are of the same size as the smaller Waxbills, are sometimes kept with them, but they are not safely to be placed in the same cage with them, without watching their proceedings. Some of them are very quarrelsome, pugnacious little things, and persecute birds twice their size. They have strong conical beaks, unlike the American Manikins, with whom they are often confounded. I believe these birds really belong to the *Amadina* family: they eat the same seeds and require the same treatment. The Bronze-headed Manikin is described

by Swainson under the name of the "Bronze-headed Bengaly." It is the smallest and prettiest species I have seen—the plumage of a deep black-brown, with green and violet reflections on the head, and on two patches on each side, one on the shoulder-coverts, and the other on the side of the breast; the lower part of the back, upper tail-coverts, and sides of the body are crossed by brown lines on a white ground; the under part of the body is pure white; the tail is black, short, and rounded; the bill and feet are also black. The Black Manikin is a trifle larger; the whole of the upper part of the body, wings, and tail are of a deep black, extending also to the throat and chest, with a green metallic lustre. The rest of the under parts of the body are pure white, tipped with black on the feathers under the wings, so as to give the effect of black scallops on the white plumage. The beak is of a delicate grey colour, tinged with green. There are also "White-headed" and "Niger Manikins," but these I have never had.

These little Estreldæ are nearly allied to the Weaver Birds, so famous for their skill in bird architecture. There are many genera of these birds, one of the most interesting of which is that of the Whydah Birds, natives of Africa, etc.

The BROAD-SHAFTED or PARADISE WHYDAH BIRD (*Vidua paradisæa*) is the species most commonly kept in cages. In its wild condition it is a very lively active bird, flitting from bough to bough, and always in motion, except when its beautiful tail has fallen off, as it always does after the breeding season is over, and then it seems quite ashamed of itself, and mopes and hides itself. This habit and the general colour of its plumage has made some people suppose its correct name to be the Widow Bird, and that it is mourning over the loss of its long train; but the name really comes from that of a kingdom on the eastern coast of Africa. Without its tail, this bird is about the size of a Sparrow. The beak is lead-coloured, almost black. The

prevailing colour of the adult male is a very deep brown-black, brownest on the wings and tail, and blackest on the back. The head, chin, and throat are black, and a black stripe runs down the breast, and a collar of rich ruddy brown round the neck, and this colour edges the black stripe and fades into the pale buff of the lower part of the body.

The tail of this bird is very curiously formed: the two centre feathers are four inches long and very broad, ending in a long thread; the two next feathers are twelve or thirteen inches long, broad in the middle, narrower and somewhat pointed towards the ends. The other feathers are only two inches and a quarter long, the two nearest the centre being curved, wavy, and glossy. The female is dark brown, nearly black when she attains to her full plumage, in her third year. Both birds generally moult twice in the year, and the male is without his beautiful tail from November to June. The winter plumage is mingled with red, and the head is striped with black and white. The song is low and melancholy. The male must be kept in a large cage on account of his tail, and the perches must be arranged so as to permit him to move about freely. They feed upon canary and millet-seed, and require a little barley-meal and green food occasionally. The hen builds a beautiful nest, which she weaves from vegetable fibres and cotton down; one compartment of the two into which it is divided only holding the eggs, the other forming a seat for the male. The Whydah Birds are sometimes kept in aviaries. In France, where they are more common, the bird-dealers have, I believe, succeeded in breeding them.

The SHAFT-TAILED or PIN-TAILED WHYDAH (*Vidua regia*) is rather a smaller and more slender bird than the preceding Whydah, and it has a red beak and feet; the upper part of the body is black, except the throat, sides of the head, neck, and breast, which are of a rusty red, the back of the neck being mottled with black. The tail is

very different from that of the Paradise Whydah, but equally curious. It is in itself short and fan-shaped, but the shafts of the four middle feathers are prolonged into bare quills, slightly widened towards the tips, seven or eight inches long. He loses these appendages in the winter, and becomes, like the female, greyish-brown. The song of this species is said to be superior to that of the former.

These two species are most commonly kept in captivity in England; but there are many varieties of Whydah Birds: one called the Dominican Whydah (*Vidua serena*) has the four long tail-feathers in another form; two are convex, and the other two are concave and placed one within the other, so as to resemble a cylinder, looking like one feather, except at the points.

Most of the Weavers proper have strong conical curved beaks, round wings, strong and large feet and legs. They are found in Africa and India, and in the Asiatic islands. The PHILIPPINE WEAVER BIRD (*Ploceus Philippinus*) is a well-known bird of this family, renowned for its curious woven nests. Another species, the RUFOUS-NECKED or CAPMORE WEAVER (*Hyphantornis textor*) is often brought to Europe, but, I believe, is not often kept, except in large collections of birds. Their weaving instincts are amusingly exhibited by their gathering every stem of grass or blade of hay, and twisting them between the wires of their cage. The RED-BILLED WEAVER BIRD (*Euplectes sanguinirostris*), another native of Africa, is a more common cage bird, especially in France. It is a light brown bird, striped with black, with a reddish tinge on the breast and lower part of the body. The chin and ears are black. The young males and hens are mottled throughout with brown and yellowish fawn colour. Some of these birds kept in the Crystal Palace, afforded great amusement to the visitors by their thefts. They were provided with abundant materials for weaving their nests, but they were continually pilfering

grass and hay from their neighbours, delighting in stolen goods. I have heard of a pair kept in an aviary with some pigeons, who amused themselves by weaving their legs together while they were sitting still. They should be kept in a large cage, and fed on canary and millet-seed, but they would probably require animal food also, as most of the African Weavers feed mainly on beetles and other insects, as well as on seeds of various kinds.

Another species of Weaver Bird, the **GRENADIER GROS-BEAK** (*Euplectes oryx*) is sold by bird-dealers under the name of the Bishop Bird. The male is a splendid bird when in full plumage: the forehead, sides of the head, chin, and lower part of the breast and body are of a rich velvet-like black; the crown of the head, throat, neck, and upper part of the breast are of a deep orange, almost red; the feathers on the neck are larger than the others, and give the appearance of a ruff; the shoulders and back are of a darker, duller orange; the wings brown on the upper part, blackish-grey underneath; the tail is dark brown, the beak black, the iris chestnut brown, and the feet are dark flesh coloured. This full plumage is only in perfection during six months of the year; the bird moults in January, and till July resembles the hen, a brown bird with feathers edged with light grey; dark grey head, with a whitish or sulphur-coloured stripe passing over the eyes. It gradually becomes blacker than the female, and when it acquires the orange colour of the neck, and the body is still mottled, before the full plumage comes in July, it is a very pretty bird. A lady, who kept a Bishop Bird in a cage with Waxbills, Avadavats, and Spice Birds, told me that he was a very amiable bird, and lived very amicably with his companions, and proved his title to be called a "weaver" by twisting little pieces of hay in and out of the meshes of a small basket put into the cage. He had a very peculiar song, and would straighten himself up, and, with a great effort, squeeze out a sound like vibrating wire, impossible to describe. These

birds are common at the Cape of Good Hope, and do much mischief in the corn-fields. In a cage they should be fed on canary and millet-seed; and they are attached to each other, therefore should be kept in pairs.

Bird-dealers sell several varieties of the Bishop Bird, which they call the "Grand Bishop," the "Napoleon," the "Scarlet" and "Yellow Bishop," but I do not know whether these are varieties of the *Euplectes oryx* or some closely allied species. They all require the same treatment.

• Another gorgeously plumaged bird is the MADAGASCAR GROSBEAK, which appears to be the same as the bird described by Swainson under the name of the "Crimson Nutcracker" (*Pirenestes sanguineus*). A specimen shown to me a year ago had a variegated plumage of red, yellow, brown, and green, but it is now, after its moulting, of a beautiful glossy crimson (deep carmine colour) throughout the head, neck, breast, upper tail-coverts, and half-way down the sides of the body: the tail and wings are brownish-black, the quills just edged with yellow; the lower part of the body from the breast to the point of the tail is of a sepia brown; the legs and feet are also brown; the beak is thick and conical, with a deep notch near the base in the upper mandible. This structure of beak would make one suppose that the bird in its native state must feed upon hard seeds or nuts and insects, perhaps beetles with hard cases. In confinement it lives chiefly on canary and millet-seed, but would probably enjoy a change of diet, hemp-seed and a few insects occasionally. It has a short, not unmelodious song.

The TANAGERS, a very numerous and diversified family of Fringillidæ, take the place of our Finches in America, abounding most in the tropical regions, Brazil, etc. They vary in size; one or two species are as large as a Thrush, or larger, but the greater part are small birds, some very small. Many of them have most beautiful colouring, and in some of the species six or seven colours are quite dis-

tinctly marked on the plumage, while in others they are softly blended. They have all notches in the upper mandible of the beak, which is less conical than in the Finches proper; and they feed upon seeds, berries, and insects picked from the branches of trees: they are rarely seen on the ground. Some of the species have considerable vocal powers, one of the Tanagers, called the Organist Tanager (*Euphonia musica*) derives its name from its rich full notes.

The SCARLET TANAGER (*Pyrranga* or *Tanager rubra*) is best known in England. It is a summer visitor to the United States, and during the breeding season the male is of a brilliant scarlet throughout the body, with wings and tail black: the latter is forked and tipped with white. In autumn he moults, and appears for some months in a green dress tinged with yellow, and dusky brown wings and tail, which is the ordinary plumage of the female. These birds are about six or seven inches long, and have very short wings. The SUPERB TANAGER is a very gaudy bird, green, blue, red, and yellow.

A lady who has been very successful in her management of the Scarlet and Superb Tanagers, has kindly sent me directions for keeping them in health and beauty. She tells me they are both charming birds, sing well, and are very tame; and she considers them most desirable cage birds, and says they will thrive well if attended to daily, and fed early in the morning with fruit, and egg, and potato, mixed with German paste. She gives them also *colifichet*, crushed seeds, and mealworms occasionally, and keeps them in the winter in a room heated to 65°, in open cages of mahogany, covered every night with green baize. They are very fond of bathing. It is only of late years that any of the Tanagers have been introduced into this country as cage birds.

When I hear of any new birds imported into England, I always hope that some day it may be found possible to bring some of the beautiful little Humming Birds into our

aviaries. In conservatories where the tropical plants which supply them with nectar have been already introduced, it seems reasonable that they might live, and the hindrance to keeping them in England would not be their susceptibility to cold, I think. Mr. Lord speaks of them as "in the very regions of the ice-king," visiting the western slopes of the Rocky Mountains early in spring as soon as the rivers opened, and asserts that some of the species prefer rocky hill-sides at great altitudes, above the line of perpetual snow. Many of them are constant visitors to New York in the summer, and some have been kept for a little time in captivity, fed on sugar, honey, and water, but they droop after being a fortnight without insect food, and unless released then, and allowed to go in search of the small spiders and other insects, which seem absolutely necessary to them at certain intervals, they die. Mr. Gosse attempted to keep them, to rear them from the nest, etc., and found that they were the most fearless little birds imaginable, ready to take food from the hand and lips at once; but although such delightful pets in that respect, it was impossible to preserve their lives without setting them free to find this insect aliment; therefore he concludes that the only way to bring them safely to England, would be by supplying them during the voyage with the minute insects only to be found in the nectar of certain flowers, into which they dip their long bills. If this could be done, he thinks they might be introduced into our conservatories. The caprice of the present day, which causes a number of these beautiful little creatures to be sacrificed on the altar of fashion, as ornaments to ladies' heads and hats, shows that they are not difficult to be procured.

Upwards of three hundred varieties of Trochilidæ have been described, and new species are continually added to the list, exhibiting an inexhaustible variety of form and colour.

PARROTS.

The characteristics of these birds are a very large hollow beak, curved above and hooked at the point, short and strong feet, adapted for climbing, and a large fleshy round tongue, which enables them to learn to speak. They are our best-known cage birds; and of late years attempts have been made to naturalize some of the species. A lady in Norfolk has kept a number in her garden, most of which live out of doors all through the winter, and one or two pairs have laid eggs and hatched their young. A friend told me a year ago, that an acquaintance of hers at Torquay had a number of Parrots, Parrakeets, and Macaws loose in her garden, sixteen or eighteen of which were killed one night by a ruthless bird-stuffer. Another lady had a Macaw, tame enough to fly above her head while she walked a distance of three miles, sometimes keeping just above a small Skye terrier, and tantalizing him by flying only just out of his reach. This bird would sit on the top of a bare tree in the snow, looking quite out of place there, but not appearing to mind the cold at all, now and then coming in to warm his feet, and then going out again, and remaining out all the winter.

The Macaws are generally inhabitants of the recesses of the interminable forests of South America; the Lories live in India and the Asiatic islands; the Cockatoos are confined to the Eastern Archipelago and Australia; the Parrots proper come from the tropical regions of Africa and South America; the beautiful little Ground and Grass Parrakeets are natives of Australia; and the tiny short-tailed Love Birds are found in both continents. They all feed on fruits and seeds, Indian corn, etc. Bread and milk (not too liquid, the milk being boiled and poured over a slice of stale bread, previously soaked in warm water and squeezed dry), biscuit, corn, nuts, sweet almonds, a lump of

sugar, hard and soft fruit are generally given to the larger species, the smaller birds live upon canary and millet-seed. Many of them are fond of Cayenne pepper; and capsicums and chilies may be given to them as remedies when out of order. Meat and sweetmeats are very injurious to Parrots; meat is especially bad for them, and heats them to such an extent that they pull out their feathers to relieve the exceeding irritability of skin from which they suffer. This is often caused by keeping them too hot; they ought to have plenty of fresh air, but must not be exposed to draughts, which will often produce asthma; bread soaked in milk, with a few grains of Cayenne pepper, is good for this disease.

Parrots are subject, too, to gouty or diseased feet: the legs and feet swell, and the bird is unable to grasp its perch: a warm bath is the best remedy for this, but great care must be taken to dry the feet thoroughly; if sore, they must be soaked in sugar and water, or anointed with sweet oil. The perches of the cage should be movable, so as to be taken out and well washed and scalded every week; and if the feet are bad, they may be covered with flannel for a time. Great cleanliness is necessary, and the cage must have plenty of sand or gravel in it. Cages of lacquered brass wire or of tinned wire, bell-shaped, square, and domed, are generally used for Parrots: unlacquered brass wire would be fatal to them, as indeed to all birds, who would rub their beaks along the wires when verdigris has accumulated on them. Cockatoos and Macaws are often kept chained to a perch. All should be supplied with water for bathing: though some of the species rarely enter a bath, others are very fond of washing, and must be indulged with a bath on sunny days. Some of them drink a good deal of water, others rarely touch it.

The Parrot tribe have, almost universally, shrill harsh voices, and many of them scream in a most disagreeable fashion. They are generally very sagacious birds, but

sometimes take very strange likings and dislikings to people, and are apt to be jealous of children; and as they bite pretty sharply, they are not always safe companions in a nursery. Those that talk appear to have a great sense of fun, and will bring in the sentences they have learnt to utter in the most appropriate circumstances. Probably they observe the effect of certain phrases when used by human beings, and their powers of memory being very great, remember the proper time to make use of them. The well-known story of Henry the Seventh's Parrot, which, on falling into the water, called out, "A boat! twenty pounds for a boat!" and on its rescue, when the waterman claimed the reward, gave orders to "give the knave a groat," is only one of numbers of the same kind. They will often repeat words apparently with the full knowledge that they are doing wrong, and expecting to be scolded or punished for the offence. A bird of which I heard some years ago, would always whistle the "Grenadiers' March" whenever he saw a certain colonel of volunteers; but when the gallant officer brought a party of ladies to his cage, instead of greeting him as usual, he, apparently with *malice prepense*, broke out into a torrent of bad language, which caused his visitors to retreat in dismay. Another Parrot, now living, appears, I am told, to have especial delight in calling out in answer to the inquiry for his mistress, "She's gone to church or chā-pel," from some idea of fun or mischief attached to the words (the lady being entirely unlikely to go to any such unorthodox place of worship). Parrots, too, will frequently act the part of *l'enfant terrible* of the house by making disclosures which were not intended to be made, either by the mistress to her guests, or by the servants to their mistress. I have read an amusing anecdote of this nature where, on the occasion of a grand dinner, a Parrot betrayed the ordinary habits of the household by calling out during the pause before dinner, "Becky, Becky, the pig's liver and a pot of beer! Quick! quick!

come away!" and repeating the call till, to the consternation of the lady of the house and the intense amusement of her guests, in walked a slipshod country girl, carrying a large dish of liver and a foaming pot of beer, and crying out, "Lucky indeed it was that I had it ready, ma'am, for Jowler, the big watch-dog, has runned away with the leg of carrion [*i. e.* venison]." I have heard of another, who lived in a kitchen, where the mistress was very suspicious of her servants, and he used always to give her notice,—“Mary has been here,” “John was here again,” etc.; and on one occasion, when the mistress came unexpectedly into the kitchen while some contraband cooking was going on, the bird called out, “Cake under the cushion, mistress!” and repeated his speech till the hidden cake was produced. It is difficult to imagine that this Parrot was not acquainted with the meaning of the words he used.

Parrots frequently form very decided and lasting attachments to their owners.

They are very long-lived birds, living sixty or seventy years in confinement. The common African GREY PARROT, too well known to need description, is renowned for its wonderful powers of imitation. This, and the AMAZON GREEN PARROT are, perhaps, the most common in this country; but there are so many specimens of splendid Parrots, Macaws, Cockatoos, etc. annually brought to England, and well known to all lovers of cage birds, that it is needless, even were it possible, to describe them. I will confine myself, therefore, to a notice of one or two of the species more recently introduced into this country.

The PLATYCERCI or Broad-tailed Parrakeets of Australia are especially lovely, glowing with blue, green, violet, and crimson tints. The KING PARROT (*Aprosmictus scapularatus*) is a splendid bird: the head, neck, and the whole of the under parts of the body are of a deep vermilion red, the back and wings of a beautiful dark green, the scapulars being of a light grass green: the quill-feathers and the

tail are bluish-black. The tail is very long, broad, and square. The hen is green in the upper part of the body, the breast being streaked with red, the under part of the body light red, and the tail green and blue.

PENNANT'S PARRAKEET (*Platycercus Pennantii*), sometimes called the Australian Lory, has the prevailing colour of the plumage of a rich crimson, each feather having a darker tinge in the centre, edged with a brighter shade. It has a beautiful violet blue throat and shoulders, and a dark blue and green tail, some of the feathers being tinged with red, and others fringed with white. The quill-feathers of the wings are also shaded with violet, red, and white. The hen is chiefly green and yellow, with crimson feathers on the head and breast.

The ROSE-HILL PARRAKEET, sometimes described under the name of the Rosella Parrot, is another beautiful *Platycercus*, with a glowing scarlet head and breast. The feathers of the back are very dark black-green, broadly edged with bright green; the upper tail-coverts are entirely of this beautiful leaf green, the tail itself being shaded with green and blue. The wings are dark green and yellow, with lilac shoulders, the under part of the body is yellow and shading into green.

The BULLA BULLA PARAKEET has a black head, with a glow of violet blue on the cheeks and chin, and a lemon yellow collar. The breast and upper part of the body are deep green, and the lower part pale green and yellow. The quills of the wings are black tipped with blue, and the two outer feathers of the tail are blue, the others green. All these Parrakeets have very long tails. They do very well in confinement, but ought not to be shut up in small cages. Their natural food consists of corn and grass-seeds, varied by grubs and insects.

The PARRAKEET COCKATOO, or COCKATEEL (*Nymphicus* or *Calopsitta Novæ Hollandiæ*) is a most beautiful and elegantly shaped bird, distinguished by its peculiar pointed

crest of light feathery filaments, yellow at the base, and grey at the tip. The head and throat of the male are lemon yellow, and there is a patch of red on the ears. The back and under part of the body are brownish-grey, the wings of a greyer tinge edged with white. The tail is long and pointed, the two central feathers being brown, and much longer than the others, which are grey; some being tinged with black, and yellow underneath. The hen has a green tinge pervading the yellow head and throat, and a number of bars of yellow and very dark brown crossing her tail. This bird is very sprightly and active, and runs a good deal upon the ground among the long grass-stems, the seeds of which it eats. It is gentle and sociable, and fond of notice.

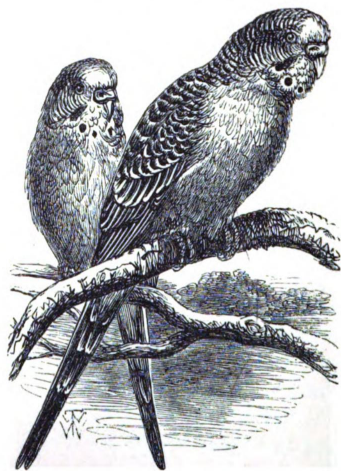
The GROUND PARRAKEET (*Pezoporus formosus*) derives its name from being almost always seen on the ground. Mr. Gould says it never perches on a tree, but it has been seen on a tea-tree scrub occasionally. It lays its eggs on the bare ground, and is like a pheasant in some of its habits. It runs with great swiftness along the ground, wending its way through the grass, and when forced to take flight, flies to a very little height from the ground, and remains a very short time on its wings. The prevailing colour of the plumage is dark green, mottled with black and yellow. In confinement it should have a long cage, in which it may run along the ground.

The MANY-COLOURED PARRAKEET (*Psephotus multi-color*) is so named from its variegated plumage, the ground colour of which is blue-green, but many of the feathers are tinted with black, blue, and red. The forehead is bright yellow, and there is a patch of deeper orange on the shoulders: the quills are black, shaded with blue and green. A bar of pale green runs across the lower part of the back, and the upper tail-coverts are red. The thighs and feathers between the legs are red, the throat and stomach are green, the rest of the lower part of the body



GREY PARROT AND COCKATOO.

p. 138



WARBLING GRASS PARRAKEETS.

p. 141

is of a pale straw colour, tinged with green, and the tail is blue and green, some of the feathers edged with white.

Several species of the beautiful little GRASS PARRAKEET, of the *Euphema* genus, have been brought to England, and are mostly easily tamed, and are pleasant little pets. The TURQUOISINE PARRAKEET (*Euphema pulchella*) has been known to breed in this country. Several pairs have been reared in the Zoological Gardens. One of the prettiest and best known of the Grass Parrakeets is the *Melopsittacus undulatus*, the Warbling Grass Parrakeet, called also the "Zebra" or "Canary" Parrakeet, and by the aborigines "*Budgerigar*" or "*Budgerie-gar*," *budgerie* meaning "pretty" or "good." This bird has a bright yellow forehead, and the head, neck, and upper part of the body are green, each feather being marked with a crescent-shaped spot of brown-black near the tip, small on those of the head, and increasing in size on the back. From these markings it is sometimes called the "Shell" or "Scallop Parrot." On each cheek are three or four spots of deep blue. The wings are green and yellow, scalloped with black. The central tail-feathers are blue, and the rest yellowish-green; the lower part of the body is light grass green. The hen is exactly like the cock, except that the latter has the cere of the nostrils bluish, and those of the hen are brown. Mr. Gould first saw these birds in 1839 in flocks of hundreds on the Liverpool Plains, and drinking at the pools in the early morning and evening; their nests were in the hollow spouts of the large eucalypti. They are now becoming common in England, thousands being brought over at a time. Some are now flying about in the Temple Gardens which have escaped from confinement. They must be kept in pairs, being most affectionate birds, constantly pluming and caressing each other, and the male keeps up a continual low warble to which the hen listens with great attention. They occasionally screech, but their ordinary voice is sweet, low, and melodious. They should be fed on canary-seed, and

are very fond of oats and grass-seed in the ear. I always put water into the cage in which I kept mine, but they did not drink much, and I never saw them bathe. They delighted in being let out of their cage, and would run along the green bars of the Venetian blinds, warbling and chirping to each other all the time; but when once allowed their liberty, they were very loth to return to their confined quarters, and were so crafty, that if constrained by hunger to go into the cage for a minute, they would pop out of it again before any one could shut them in. These birds frequently breed in England in December or January. They do not build a nest, but lay their four eggs in a piece of wood with a hole in the centre, which they will hollow out till deep enough, or in a cocoa-nut prepared for the purpose. They like to go through a hole to their resting-place, and to be as retired as possible, therefore I should doubt the wisdom of taking away the first eggs and substituting false ones till the four are laid. The reason given for this practice is, that the hen lays every other day only, so that the young would be some days apart in hatching. She sits seventeen days, and feeds her young, I believe, as Pigeons do, disgorging the food into their mouths. Budgerigars should have a cage four feet long, and twenty inches in height and width. I put mine into my Canaries' large winter cage for a time, and they agreed very well with them, or rather, they never attempted to interfere with them. I have heard of a Grass Parrakeet, however, that was put into a cage with a Canary, and fell upon it and killed it instantly. Groundsel is said to be good for these birds, and lettuce injurious. Mine never touched either, but occasionally ate some bread soaked in milk, with maw-seed sprinkled over it; and this is, I believe, often given to sickly birds with good effect.

These Parrakeets are often called the Australian Love Birds, and are consequently confounded with the true Love

Birds, which are very different: little round birds, with the shortest of fan-shaped tails. The common BRAZILIAN LOVE BIRD (*Psittacula passerina*) is grass-green, with the under-side of the wings blue, and a patch of blue on the back. The AFRICAN LOVE BIRD (*Agapornis pullaria*) is somewhat larger, has the bill, forehead, cheeks, and throat red; and a red tail, barred with black, and tipped with green. There are many other species; they all live upon canary-seed, and do not require a large cage. They are never happy apart, and sit as close as possible together, continually fondling and caressing each other.



DOVES.

These are pretty, gentle, quiet birds, and easily tamed. They are very affectionate, and should never be kept in solitary confinement, for they are unhappy without their mates, unless they become extremely attached to their owners. The only species commonly kept in the house are the Turtle Dove and the Collared Turtle, which require warmth at night, but abundance of air during the day. They will very soon become tame enough to follow their owner about the garden without attempting to fly away. They should have a wicker cage, and be taught to return to it at night. They wash and bathe a good deal, and require plenty of gravel and old mortar on the floor of their cage, and should have bay salt mixed with their food, as they are subject to diseased throats, for which this is a remedy. They feed principally on corn, pease, and vetches, and will also eat hemp, canary, and millet-seed, bread, fir-seeds, and berries. Both the Turtle and Collared Turtle breed readily in confinement, and feed their young from their crops as Pigeons do.

AVIARIES.

I feel some hesitation in writing on this subject, because I have no personal experience of any of the plans proposed for Aviaries; and so many of the ornamental buildings for which designs are given are constructed after a fashion which is extremely picturesque, but not in the least adapted to the wants and comforts of the birds within them. Making the latter the chief consideration, I should suggest that an outdoor aviary built of wood must necessarily be hot in summer and cold in winter, and that it would be preferable built of brick, stone, or rubble, and with an open roof thatched; in fact, a little thatched cottage, whitewashed within and painted or plastered without. This might be either circular, with the front wired and glazed, about fourteen feet in diameter; or a more perfect one might be obtained by making the building eighteen feet by twelve, and twelve feet high, with a bay window occupying the front, looking south, the panes of which should be made to open outwards, to allow of the galvanized iron wire netting, with which the glass must be lined throughout. Either concrete, brick, or tile flooring would be needed to keep out vermin, and this should be covered three or four inches thick with sand and gravel mixed with a little old mortar. The roof should be thickly thatched, and the open rafters will form most comfortable roosting-places for the birds. On one side of the aviary should be a deep porch with a double door, the outer one of wood and the inner one of wire. If this porch were furnished with seats, the birds could be observed with the utmost ease. A fountain playing in the centre of the aviary, with a shallow basin round it for the birds to drink at and bathe in, would add to the beauty of the scene and to the birds' pleasure. If plants were not admitted into it, there must be upright poles with perches nailed on to them in the four corners of the room; but a

better plan would be to have evergreens in pots all round the room, which should be removed and replaced by others when defaced by the birds. A couple of orange and myrtle trees in tubs placed in it during the summer would delight them; fir trees are the best evergreens. Any shrubs that would be injurious to them must of course be avoided. Boxes of mignonette, chickweed, and groundsel placed on the window-sill would be a great acquisition to the birds; but a constant succession of these plants would be necessary, as they very soon strip them of every flower and leaf. Seed-hoppers and pans for food and glasses for water should be hung up round the room, and hanging baskets and swings might be introduced. The windows should be furnished with blinds and shutters, to be drawn down and put up as the weather demanded. If this aviary could be warmed during the winter, the warblers and other delicate birds might be its inmates throughout the year; if not, only the hardy seed-eating birds could remain in it; the others must be removed to a winter cage or aviary in the house, kept at a certain temperature. Stoves placed in the aviary would be injurious to the birds: the heated pipes give out so much carbon as to affect their delicate lungs; but it might perhaps be warmed by the apparatus used for conservatories.

A conservatory devoted to birds would be a very delightful abode for them; but of course it must be wired within the glass, and means must be taken to shade the birds from the fierce summer sunshine. A portion of a conservatory opening into the house is sometimes wired off, and this forms a very pretty aviary, and the birds look exceedingly well with flowers all about them. I have seen a small room between two well-warmed sitting-rooms used as an indoor aviary; this was only about twelve feet by eight, with a French window, or rather door, opening outwards, and a wire grating within it, a fountain in the centre, and the walls were boarded and furnished with

shelves one above the other, on which were placed the seed and water-glasses, and boxes for nests. There were double doors to this room; I think one was of wire and the other glass, so that the birds could be seen in passing from room to room. The fires in each of these sufficiently warmed this aviary in winter; Canaries, Goldfinches, and Linnets only lived in it. Very few young birds were reared in it, and breeding in aviaries is always very doubtful. The idle birds are apt to pull the nests of the industrious birds to pieces, and to eat their eggs and peck the young ones. Then there arise jealousies between the cocks and hens, and a good deal of quarrelling and fighting go on, so that it is by no means a happy family: the only chance of success is by putting the several couples in separate cages till they are ready to build, and then turning them into the aviary, putting no single birds in at the same time to interrupt their proceedings. However, some of these couples may be faithless, and the hens are apt to quarrel over the nesting-places, so that it is not a plan to be recommended, and it would be best to keep no hens in the aviary. Experience proves that when there are no ladies to excite jealousies amongst the gentlemen, matters are conducted much more harmoniously: they might be safely admitted during the winter, perhaps, but as early as February they must be taken away.

Canaries, Siskins, Goldfinches, Linnets, and Redpoles, Twites, Chaffinches, perhaps American Goldfinches, and Java Sparrows, would do well together; Bullfinches and Greenfinches are sometimes spiteful; Yellow Ammers might agree with the other birds; and in the summer a Nightingale, Blackcaps, Whitethroats, Redstarts, Babilards, and other warblers might be admitted, and perhaps a Thrush and Woodlark; but of course all these birds would require a supply of their especial food, given fresh daily, and placed in pans of glass or earthenware. Most birds like bread crumbs, egg, mealworms, ants' eggs, oats, barley-

meal, fruit, and berries, and green food occasionally. Various recipes are given for universal pastes, which are to afford food equally to granivorous and insectivorous birds; but it is just as easy to give the food that suits the hard-billed and soft-billed birds respectively, as to make them all eat of the same dish; a plan which, of course, involves a great deal of fighting over the food, and is very likely to cause the starvation of the more timid inmates of the aviary.

In selecting the birds that are to be placed together, their several dispositions and natural habits should be well considered, and none likely to tyrannize over the others should be admitted. As a rule, birds of the same size and class should be placed together; a great deal of suffering would be caused by confining combative birds in a small space, and by giving them opportunities of worrying and tormenting their weakly and delicate companions. Robins, Titmice, House Sparrows, etc., are often quarrelsome and murderous, and persecute the other birds exceedingly.

Tropical birds, of course, require a very different temperature from that needed by the natives of colder regions, and this must also be taken into account.

For myself, I should not care to keep English birds in an aviary. I infinitely prefer putting baskets and warm nesting-places into a sheltered outhouse, where the birds may find food during the frost and snow of winter, and can enjoy their liberty at the same time, allowing them to come and go at their pleasure. It is a mistake to expect any birds to live happily in a very open aviary, unsheltered from the extreme heat of summer and cold of winter. When at liberty they can find protection from both in their native coverts, and although they may possibly exist through the winter exposed to a chilling east wind, they suffer extremely from it, and will often mope in corners, ruffle up their feathers, and refuse to sing till a gleam of sunshine comes to revive them. The glare of a noontide sun, too,

in the height of summer, is exceedingly painful to birds who are exposed to its fierce rays without the means of finding shade. Many of the tropical birds sleep during the extreme heat of mid-day, and continue the custom for some time after they are brought to England: doubtless they resort to the deep recesses of their magnificent forests, and find shelter in their luxuriant foliage, when the sun is at its meridian in their native lands.

An aviary constructed of two compartments, one within a warmed room and one without, communicating by a sliding panel or swing door, might answer well for Canaries and other semi-hardy birds, and give them fresh air, sunshine, and warmth; but of course the outdoor compartment must be protected by shutters in winter, and at night.

An unused attic, with wired windows, and a loose net before the door, to enable the floor to be swept out, and the room to be entered without allowing the birds to escape, would be the simplest and most inexpensive aviary; but under a slated or tiled roof the room would probably be very hot in summer and cold in winter. A thatched roof would not be open to the same objection. An oilcloth flooring kept constantly washed and sanded would answer well for this bird-room. Care must always be taken to keep the aviary clean and carefully swept out, and sanded afresh either every day or every other day, according to the number of birds confined in it, and as little dust should be raised in this process as possible—it will sometimes affect the lungs of the delicate birds injuriously. Fresh air, sunshine in moderation, warmth, and cleanliness are indispensable for all birds kept in captivity.

I cannot conclude this little volume without cautioning my inexperienced readers against purchasing their birds, cages, and seed from itinerant bird-dealers and careless or ignorant salesmen. Great deception takes place with regard to birds: those who hawk wild birds newly caught about the streets, will sometimes drug them till they are half insensible, or confine their poor little bodies with wires in order to exhibit their tameness, and will paint common Sparrows, and improvise a crest upon an English bird, and pass it off upon some credulous purchaser as a rare and costly foreigner. Instances of these frauds have often come to my knowledge: only the other day, a benevolent German lady wrote to ask me to give a home to a poor little bird which she had picked up in a street in London: she supposed it had escaped from some cage, and she described it as of very beautiful plumage, and said it must be very rare, as no bird-dealer to whom she had taken it could give it a name. She provided it with seed and water, but it died the next day, and on examination it was found to be a painted Sparrow, and to be poisoned by the paint which it had imbibed in pluming itself after a bath.

Cages of common brass, unlacquered, are liable to become covered with poisonous verdigris, and badly constructed cages of all kinds often cause great injury and suffering to their inmates. Some breeding-cages were offered to me a short time since, so badly finished that the points of the wires forming a partition between the nursery compartment and the body of the cage, were standing up above the woodwork in all their sharpness, and sharp wires projected also into the round holes through which the birds were intended to pass their heads for seed and water; so that the unfortunate inmates of these cages would be exposed to injuries likely to produce lameness, and wounds in the head, every day of their lives!

Bad seed, too, will often cause the disease and death of birds, if tainted by mice or mildew; so that it is of great consequence to purchase it where it is sure to be good and sound. I have been told by ladies who have purchased birds, cages, and seed from Mr. Green, at the Bedford Conservatories, Covent Garden, that his birds have been sent in good condition, and that they have been well supplied by him with cages and seed. But I have never purchased either of him, and can only speak from personal experience of Mr. Edward Hawkins (Naturalist), of 6 Bear Street, Leicester Square, whom I can thoroughly recommend to my readers. He has supplied me with birds, cages, and seed for many years, and I have ever found him most conscientious and fair-dealing in every respect.

Moreover, he is thoroughly acquainted with birds of every kind, and always sends them out in excellent condition, and is most kind in giving valuable information to those who desire to promote the health and comfort of their birds. In the course of this work I have referred many perplexing questions to him on the subject of birds, about which I could not obtain reliable information elsewhere; and I gladly take this opportunity of expressing my obligations to him for his kind assistance.

At my request, he has furnished me with the average prices of the birds ordinarily sold as cage birds; but he tells me that it is impossible to fix a standard price for birds of any kind, as it varies so much with the supply in the market, and also depends upon the beauty of form and plumage, and excellence of song, of the respective birds. It varies, too, with the time of year, and with the degree of acclimatization of some of the more delicate foreigners.

Mr. Hawkins is generally well supplied with Piping Bullfinches, Canaries of every variety, small foreign birds and British song birds, cages of all sorts and shapes, seed, and everything a bird can require of any kind. I append a list of the *average* prices of birds and their requirements,

Average Prices of Birds.

151

in the belief that this will prove a valuable addition to a Manual on Bird-keeping.

Cockatoo, Leadbeater's, £5.

Do. Lemon-crested, £3 5s.

Mackaw, £5.

Parrot, Grey African, from £1 5s. to £2.

Parrot, Talking, from £5 to £10.

Do. Amazon Green, from £1 to £2.

Do. Ceylon, £1.

Australian King Parrot or Parrakeet, from £3 to £5.

The Rose-hill and Pennant's Parrakeets (sometimes called Lories), from 25s. to 60s.

Blossom-headed or Ring-necked Bengal Parrakeets, from £1 to £2 each.

Cockateels, £2 per pair.

Ground Parrakeets, £3 per pair.

Grass Parrakeets, many-coloured, £3.

Do. Budgerigars, from 10s. to 30s. per pair.

Turquoise Parrakeets, from 40s. to 60s. per pair.

Red-rumped do., from 25s. to 35s.

African Love Birds (Swindern's), 25s.

Brazilian Green do., £1.

Collared Turtle Doves, 10s. per pair.

Troopials, from £2 to £3 each.

American Mocking Bird, £4.

Indian Mina Bird, from £4 to £10.

Tanager, Superb or Septicolor, £3.

Do. Scarlet, from 25s. to 35s.

Virginian Nightingale, from 20s. to 30s.

Green or Black-crested Cardinal, £2.

Red-crested do., 25s.

Pope, £1.

Nonpareil, 15s. to £1.

Indigo Bird, 12s.

Whydah Bird, from 12s. to 15s.

Pin-tailed do., from 12s. to 15s.

Madagascar Bird, £1.

Grand Bishop Bird, £1 to £1 10s.

Common Bishop Bird, 12s. to 16s.

Crimson Bishop Bird, £1.

Weaver Birds, 10s. to 12s. per pair.

Java Sparrows, from 8s. to 10s. per pair.

Cutthroat or Coral-necked do., from 8s. to 10s. per pair.

Diamond Sparrow, from 12s. to 15s. each.

American Goldfinch, 10s. each.

Saffron Finch, 12s. each.

Cuba and Negro Finches, £1 per pair.

Senegal or St. Helena Canaries, 12s. per pair.

Green and Yellow Singing Finches, 12s. per pair.

African Grey do., from 15s. to 20s. per pair.

Australian or Rockhampton Finches (the Banded Grass Finch, Chestnut-breasted Finch, and Red-tailed Finch), from 30s. to £3 per pair.

Brisbane Finch, from £1 to £1 10s. per pair.

Cambasso Birds, 12s. per pair.

Spice or Nutmeg Birds, 12s. per pair.

Silver-Beaks, African, 10s. per pair.

Do. Indian, 10s. per pair.

Manikins, African, Bronze, 10s. per pair.

Do. Black-headed do., 12s. per pair.

Do. White-headed do., 12s. per pair.

Cordon Bleu, 15s. per pair.

Fire Finch, 12s. per pair.

Avadavat or Amandava, 12s. per pair.

Waxbills, African, 10s. per pair.

Do. St. Helena, 12s. per pair.

Do. Orange-cheeked, 12s. per pair.

Do. Zebra or Orange-breasted, 12s. per pair.

Do. Australian do., £1 per pair.

Average Prices of Birds.

153

CANARIES.

German Canary, from 8s. 6d. to 21s., according to song.
Hens, 2s. 6d. to 3s. 6d.

Lizard Canary, 15s. to 30s., according to markings—a clear cap indispensable.

Norwich Canary, from 8s. 6d. to 25s. each, according to colour.

Belgian Canary, from 25s. to £3, according to fineness of breed. (It should have high shoulders, smooth feathers, straight legs, and hold its tail close to the perch).

Cinnamon Canary, from 12s. to 30s.

London Fancy Canary, 30s. (This breed is dying out.)

The cocks and hens of these varieties are about the same price, as this depends upon the plumage, and shape, and size of the birds.

Mule birds vary according to plumage and song. A common brown mule would cost 8s.; if a very good songster, £1. The bird-dealers have made pied mules very dear: £10, and in one instance £13, has been given for one of great beauty. The hens have no value.

A Piping Bullfinch varies in price from £1 to £5 5s., according to the perfection of its tune or tunes. £3 3s. is the ordinary price of a good bird.

BRITISH SONG BIRDS.

British song birds may be purchased for a mere trifle, if newly caught. For aviaries they are generally from 1s. to 5s. each. A Siskin would cost about 3s. 6d.

Goldfinch, Linnet, Bullfinch, Chaffinch, from 5s. to 10s., according to beauty and domestication; educated birds, of course, would cost more. A Nightingale newly caught might be purchased for 7s. 6d; but a good, promising bird, caught in April and kept till the following autumn, would cost £1, and in full song, £2. A Blackcap would average

about the same prices; a Whitethroat and Garden Warbler somewhat less.

A Woodlark, newly caught, 5s.; in full song, from 10s. to £1. A Skylark, newly caught, 2s. 6d. to 5s.; in full song, from 10s. to £1. A Song Thrush from 5s. to £1. A Blackbird about the same. A Starling, taught to talk, from 10s. to £1.



CAGES.

These abound in all sizes, shapes, and kinds. I can only mention a few of the most useful description. Aviary cage, with compartments having two movable partitions, waggon-shaped, 3 ft. 3 in., in lacquered brass, £5, in white wire, £3. This is a very useful cage for foreign birds, as the divisions would permit birds of various sizes to be kept in it: for instance, a number of tiny Waxbills, etc., might inhabit the centre, and Australian Finches, or Diamond and Cutthroat Sparrows, Indigo Bird, Nonpareil, Madagascar Bird, or Bishop Birds might live in the side compartments. Another pretty cage of the same kind has a dome and two arches. It is 3 ft. 6 in. by 18 in., and in lacquered brass costs £5, in white wire, £4; a smaller cage 3 ft. by 16 in. in lacquered brass, £4, in white wire, £3. A waggon-shaped cage, suitable for eight or ten pairs of very small birds to live together in, 18 in. by 12 in., of lacquered brass, costs 25s., in white wire, £1; the same, but smaller, 15 in. by 10 in., lacquered brass, 18s., white wire, 15s.; 13 in. by 9 in., lacquered brass, 14s. 6d., white wire, 12s.; 11 in. by 8 in., lacquered brass, 10s. 6d., white wire, 8s. 6d. All these cages are particularly nice and convenient for birds, no space or comfort being sacrificed to ornament. I have mentioned the prices of those made of the best mahogany,

with sand-drawers and bottoms in solid mahogany (less liable to warp and less likely to harbour insects than deal cages, which would be somewhat cheaper). Breeding-cages may be had of various sizes and prices, from 3s. 6d. to 35s., according to size and material. The most useful is, I think, about 22 in. long, 14 in. high, and 10 in. deep. This made in deal, with polished mahogany fronts, whitened inside, with a compartment for young birds, and completely fitted up with glasses, tins, etc., would cost 10s. 6d.

A Parrot's cage would vary in price from 15s. to 25s., and cages for single birds, made of wood and wire, bell-shaped, from 7s. 6d. to 12s. 6d. An ordinary round cage for a Canary would be 3s. 6d., 4s. 6d., or 5s. 6d. Some of the metal cages are very handsome. The Zollverein cages vary from 3s. 6d. to £1; a pretty cottage cage of this kind would cost 7s. 6d. Bird-glasses cost from 1d. to 4d. each; "pegging-pots" (small covered tins with round holes, preventing the birds from washing in them) 3d. or 4d. each; bird-hoppers for seed, with two holes, 1s. 6d., with three, 2s., with four, 2s. 6d.—very useful for large cages. Baths in metal, 1s. and 1s. 6d. each; in wood and wire, with pan, 3s. 6d. and 4s. 6d. each. Scrapers, 4d. each, used to scrape the cage when the drawer is taken out, are very useful; the sand and seed settle at the back, and cannot be cleared out without tilting up the cage, much to be deprecated when there are eggs or young birds in it.



SEED.

Canary-seed is sold at 6d. the quart, 3s. the peck, 12s. the bushel. Hemp-seed at 6d. the quart, 3s. the peck. Flax and rape-seed each at 6d. the quart. These four seeds are sometimes sold mixed at 3s. the peck.

German sweet summer rape-seed, generally called "bird-turnip," is sold at 1s. the quart: that grown in England will not do as well for the birds.

Indian millet is ordinarily 1s. the quart, but when scarce, 1s. 6d. Birds are very fond of this in the ear, and thirty-six sprays may be had for 1s. The common French millet costs 8d. the quart.

Groats, very good for Canaries, are 8d. the quart. Maw or moss-seed, 8d. the pint.

The *colifichet*, or rings of French bread made for birds, cost 1s. for eight rings. German paste, 8d. per pound (for soft-billed birds). No bird should be without a piece of cuttlefish hung up in its cage: it is pure carbonate of lime, and very wholesome, and almost all birds delight in pecking at it: seven pieces are sold for 6d.

Bird-gravel is of course an essential: it is sold at 1s. per peck.

I have, I believe, mentioned everything requisite for birds of all species here, or in the course of this little volume. Nest-bags I have not spoken of, as they are often receptacles for insects; moss, cow-hair, or doe-hair, and a very little cotton wadding (without which some birds will not build), are all that is required.



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